IMPACT OF TAX, TRANSFER, AND EXPENDITURE POLICIES OF GOVERNMENT ON THE DISTRIBUTION OF PERSONAL INCOME IN CANADA

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This is a study of the first order incidence of government taxation and expenditure policies on the incomes of families and unattached individuals in Canada in 1970. The specific purposes of the study are twofold. The first is to estimate for calendar year 1970 the first order incidence of governments' actual tax, transfer, and expenditure policies on spending units. The second objective is to simulate the changes in this incidence that would have occurred in 1970 if the new federal personal income tax, unemployment insurance, old age security and family allowance programs had been in operation during that year. The methodology is similar to that used by W. Irwin Gillespie in his pioneering 1964 study for the Royal Commission on Taxation.

It is concluded that the 1970 incidence of the combined tax and transfer programs of all levels of government is broadly redistributive, with net incidence of federal government programs being considerably more redistributive than that of provincial and local governments. In general, the public sector provides large net benefits to families and individuals with incomes of less than $4,000, declining net benefits to families earning from $4,000 to $11,000 and levies small but increasing levels of net tax on families and individuals with incomes in excess of $11,000. This general conclusion is relatively insensitive to the precise assumptions made about the shifting of taxes and the distribution of expenditures on pure public goods. From simulation experiments, recent reforms of the federal income tax, unemployment insurance, old age security and family allowance systems were estimated to increase the amount of redistribution from the rich to the poor.

I SUMMARY AND CONCLUSIONS

(a) Scope and Method

The purpose of this paper is to estimate the impact incidence of federal, provincial and local government taxes and expenditures in 1970 and to estimate the change in this incidence that would have been observed if the recent reforms to the federal income tax and transfer programs had been in place in that year. The methodology employed in making the estimates of net fiscal incidence in 1970, described in Section II, is similar to that used by Irwin Gillespie in his 1964 study.[1] *Broad income* (cash and non-cash income before taxes and transfer payments) is computed for a sample of families and individuals on the basis of data from the 1969 Survey of Consumer Finances and projected forward to 1970. Government

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Although the paper has been prepared at the request of the Department of Finance, responsibility for the paper is that of the author. The analysis and views expressed in this paper do not necessarily represent those of the Minister of Finance or of the Department.

[1] W. Irwin Gillespie, *Incidence of Taxes and Public Expenditures in the Canadian Economy*, Royal Commission on Taxation, Study No. 2, 1964.

indirect taxes and expenditures on goods and services are allocated to families on the basis of their pattern of consumption estimated from the 1969 Family Expenditure Survey and brought forward to 1970. Direct taxes and transfers are computed for families by tax and transfer algorithms which include all major tax and transfer provisions. Families are grouped in fifteen money classes and for each of these classes the value of government expenditures received and the amount of taxes paid is calculated. Data and statistical procedures for these calculations are described in Section III.

Broad income plus expenditure benefits less taxes paid is called *adjusted broad income*. The *net fiscal incidence* of taxes and expenditures is the difference between broad income and adjusted broad income.[2] Estimates of net fiscal incidence are presented in Section IV.

In making calculations of impact incidence it is necessary to make many assumptions about the distribution of particular expenditure items across income classes and about the degree to which particular taxes are shifted. The direct beneficiaries of many items of expenditure are relatively easy to identify (health, education, transfers, etc.) on the assumption that these expenditures do not give rise to external benefits.[3] However, there is no universally acceptable method for allocating "general expenditures" on pure public goods. The main set of estimates in this study is based on the assumption that the benefits from these expenditures are distributed on the basis of broad income. Estimates based on other assumptions are made in Section IV (d). While expenditure incidence is somewhat sensitive to the precise assumption made about the distribution of benefits from pure public goods, the conclusion that net impact incidence of taxes and expenditures is broadly redistributive holds under a wide range of assumptions.

On the tax side, it is not possible to secure agreement about the extent to which corporation income taxes are shifted. The primary estimates of this study are based on the assumption that 25 percent of these taxes are shifted forward to consumers and 75 percent borne by shareholders. Estimates of net fiscal incidence based on different shifting assumptions diverged only slightly from this primary estimate, however. Similarly, estimates of net fiscal incidence are very insensitive to the assumptions made about the shifting of payroll taxes.

In Section V estimates are made of what the total incidence of federal taxes and expenditures would have been in 1970 if the Income Tax Act of 1971, the Unemployment Insurance Act of 1972, the higher old age pension and income supplement rates of 1973, and the Family Allowance Act of 1973 had been in force.

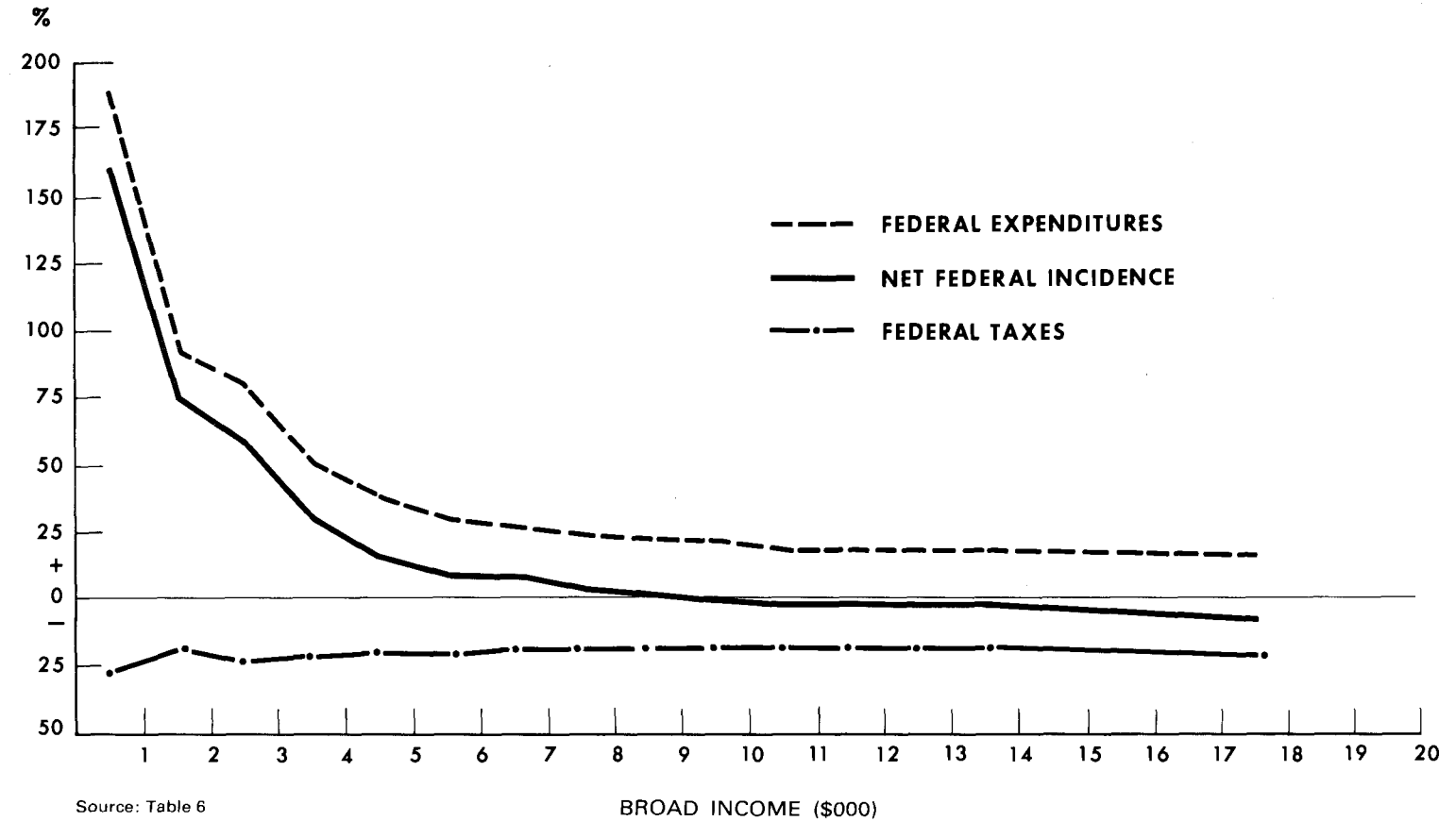
(b) Conclusions

The impact of government tax and transfer programs is broadly redistributive. As can be seen from charts 1 and 2, the impact of programs at all levels of government is to provide large net benefits to families and individuals with

[2]Note that capital gains are *not* included in Broad Income or in Adjusted Broad Income in this study.

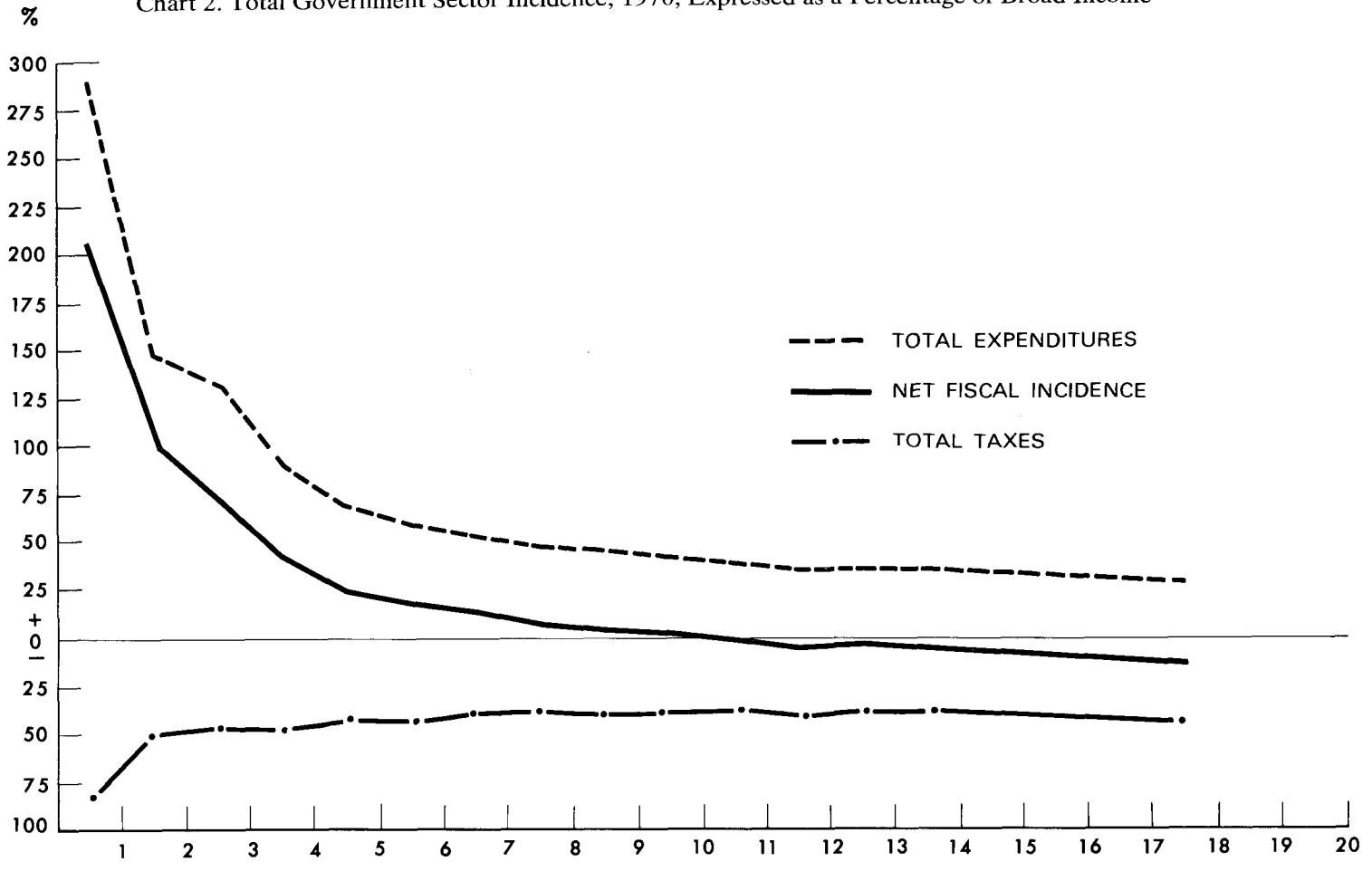
[3]A detailed description of procedures and sources of data used for the distribution of expenditure aggregates across individuals is to be found in the appendices to this study. These appendices are available from the author on request. For readers unfamiliar with the Canadian tax and transfer system, a short synopsis is provided in an appendix at the end of this article.

Chart 1. Federal Fiscal Incidence, 1970, Expressed as a Percentage of Broad Income



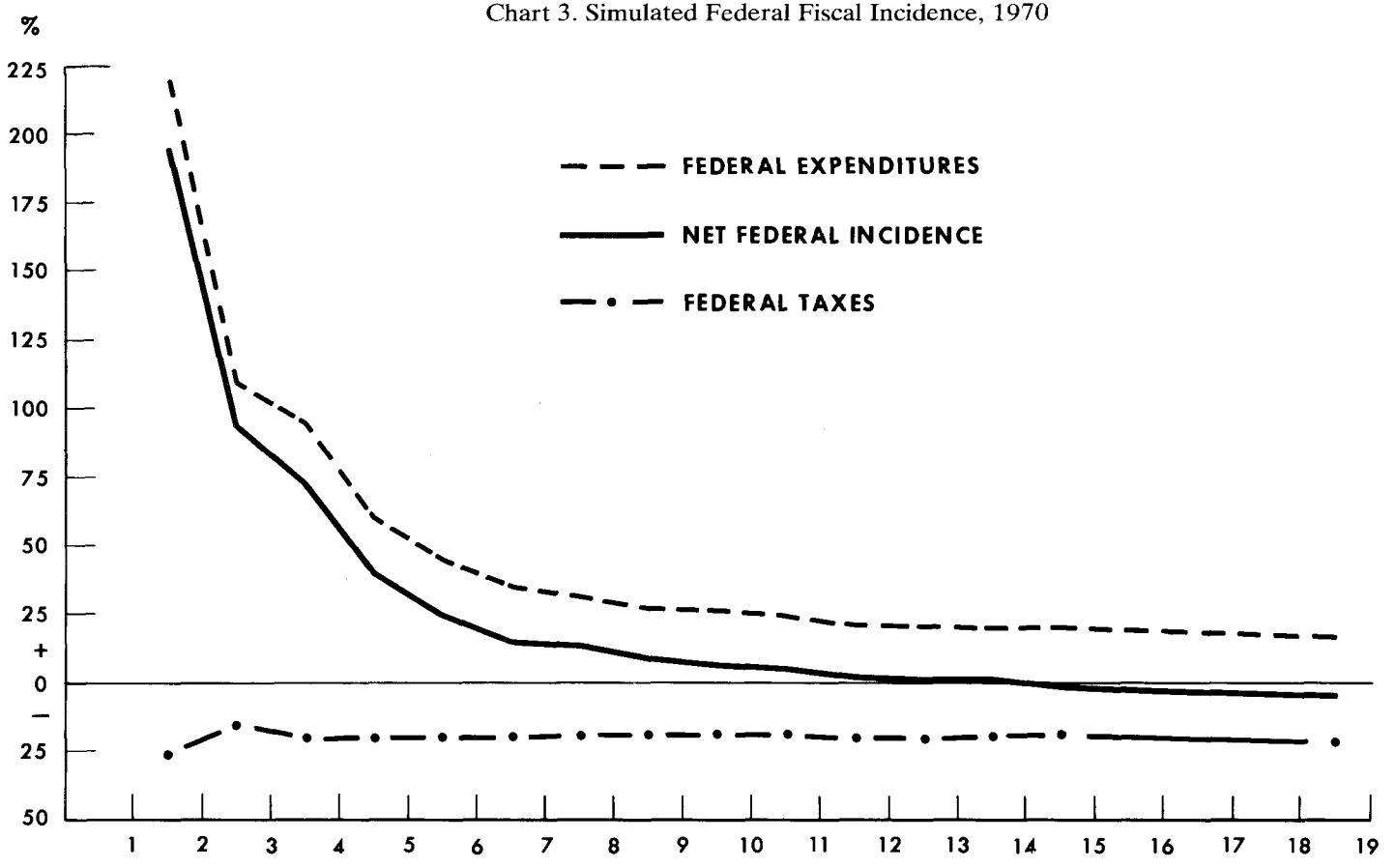
Source: Table 6

Chart 2. Total Government Sector Incidence, 1970, Expressed as a Percentage of Broad Income

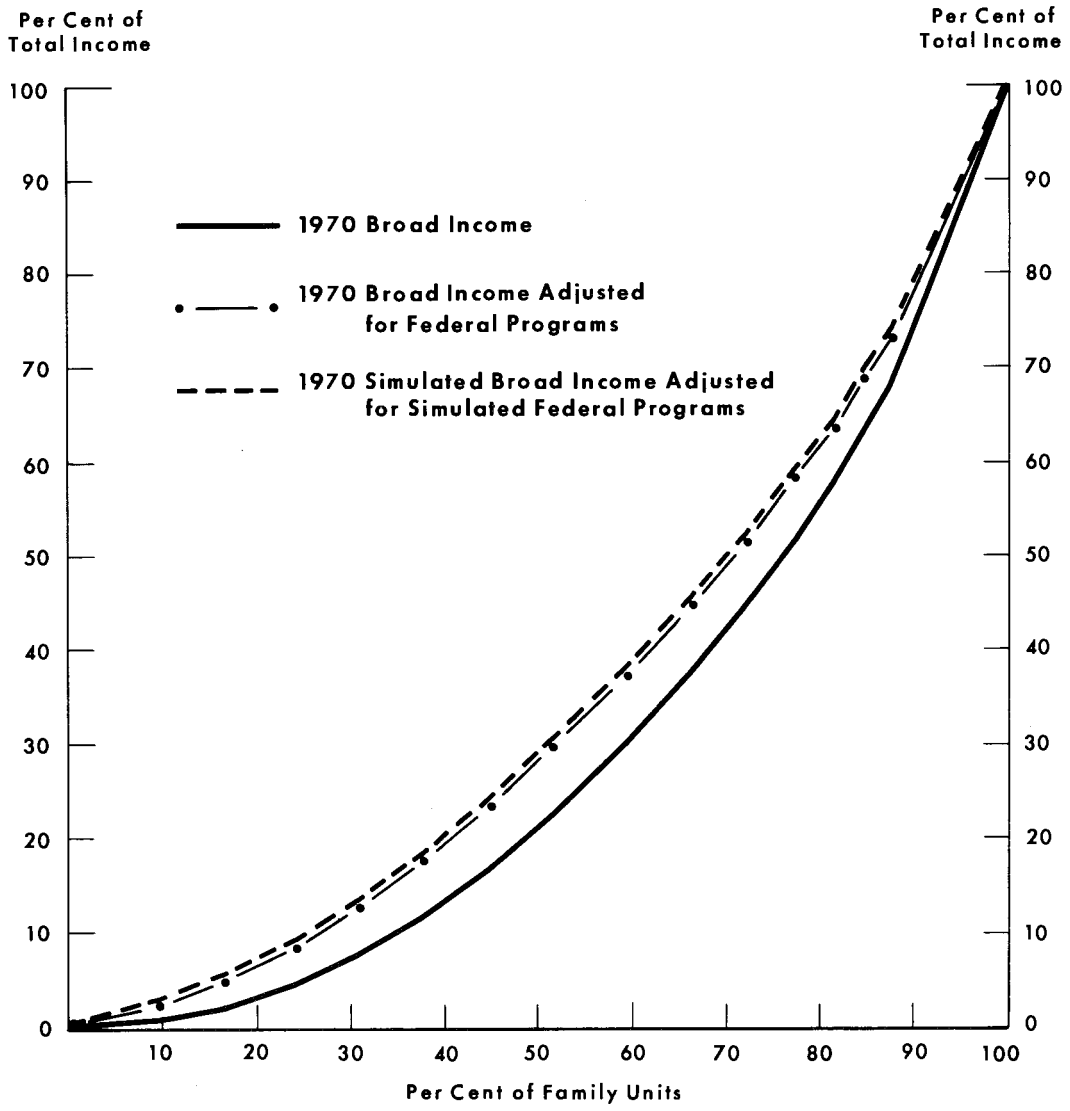


Source: Table 6

Chart 3. Simulated Federal Fiscal Incidence, 1970



Source: Table 14



Sources: Tables 5 and 15

Chart 4. Lorenz Curves for 1970 Broad Income, and Broad Income Adjusted for Federal Programs

incomes of less than $4,000, to provide declining net benefits to families earning from $4,000 to $11,000, and to levy small but increasing levels of net tax on families and individuals with incomes in excess of $11,000. The extent to which income inequality was reduced by federal government programs is shown in the Lorenz curves in chart 4.

From chart 3 it is also clear that the recent reforms of the federal income tax, unemployment insurance, old age security and family allowance systems will

increase the amount of redistribution from the rich to the poor. While the changes do not appear large from chart 4, it is estimated they will bring about more redistribution than did all tax and social security changes from 1961 to 1970.

II Methodology

The purpose of this section is to outline both the economic rationale for the calculation of the impact of the public sector on the distribution of personal incomes, and the assumptions on which this calculation is based.

Tax, transfer and expenditure policies of the public sector affect the distribution of personal incomes in two major ways. First, these policies affect personal incomes *directly* by

(i) taxing away part of that income,
(ii) transferring money directly to persons and families,
(iii) providing services to persons and families, and
(iv) providing pure public goods.

Second, these policies affect personal income *indirectly* by affecting the composition of output and hence changing both the relative and the absolute prices of final goods and services, and of factors of production. Theoretically a study of the impact of government policies should take into account both the direct (first order) and indirect (higher order) effects. In order to estimate the total incidence of the government sector including both first and higher order effects, however, it would be necessary to calculate the level and distribution of personal incomes that would have existed in the absence of the activities of the public sector. This calculation is not feasible as the behavioral relationships on which such a calculation could be based are not available nor, in practice, estimable.

It is not possible to account for higher order effects of *all* government activity since the institutional framework of markets would be so different in the total absence of government that none of the estimates of behavioral response to policy changes made in the current institutional setting would be valid. Estimates of these behavioral parameters are only valid in estimating the higher order effects of relatively small *changes* in government policy. It is not possible to account for higher order effects of *all* government activity since none of the behavioral parameters estimated from historical data could be expected to be stable in an environment from which the government sector is removed.[4]

The "impossibility" of accounting for second and higher order effects of government policy in a total incidence study means that the estimates will always be highly suspect. In fact, the only real use of such estimates of total incidence is to provide a yardstick against which to measure the effect on income distribution of *changes* in government tax and expenditure policy. Hence, in this study it is not the existing 1970 total incidence which is of prime interest, but rather the *change* in that incidence brought about by changes in federal tax and transfer policies in Canada. These estimates of the incidence of changes in government tax and expenditure policy, which are of great interest to policy makers, can be estimated

[4]See L. Sawers and H. M. Wachtel, "Theory of the State, Government Tax and Purchasing Policy, and Income Distribution," this issue.

with a reasonable degree of confidence. Moreover, both the first *and* the higher order impacts of these changes are in practice estimable. In this paper only the first order effects have been estimated, however.

The methodology adopted for the calculation of the direct (first order) impact of government programs is similar to that which was used by Gillespie in his study for the Royal Commission on Taxation and in subsequent Canadian studies.[5] This procedure involves the manipulation of a *micro-data* file on income, expenditure and demographic characteristics of family units to determine the direct and indirect taxes paid by or shifted to the individual family units. Family units are then grouped into categories on the basis of income and demographic characteristics, and the taxes paid to governments and private benefits received from governments are aggregated for each category. Benefits of expenditure on pure public goods are then allocated to each category on the basis of the particular assumption about the distribution of these benefits which is used. Details of the procedures, methods, assumptions and definitions used in this study are listed below. Differences between the approach used here and the approach used by Gillespie are appropriately noted.

(a) The Measurement of Direct Fiscal Incidence

The incidence of the program of governments on the income of an individual, family or group of families is defined to be the difference between the broad income and the adjusted broad income of the individual, family or group of families. The incidence of any particular program is defined to be the difference between broad income, and broad income adjusted for that particular program only. Broad income includes money and non-cash income from all private sources net of all government taxes and transfers. Capital gains are also excluded from broad income. Adjusted broad income is broad income plus government expenditures minus all taxes.[6]

(b) Economic Family Units and Income Groups

In this study, family refers to the *economic family unit* as defined for the Consumer Finance Survey. The economic family is defined as a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption. An individual living alone in a separate dwelling constitutes an economic family unit for the purpose of this study. These family units are grouped into fifteen income categories on the basis of money income of the unit in thousand dollar intervals from $2,000 to $14,999 per year, with separate categories for units with money incomes of less than $2,000 and equal to or greater than $15,000 per year.

[5]See W. Irwin Gillespie, *op. cit.*; James Johnson, *The Incidence of Government Revenues and Expenditures*, prepared for the Ontario Committee on Taxation; and Allan Maslove, *The Pattern of Taxation in Canada*, Ottawa: Economic Council of Canada, 1973.

[6]See Table 1 for a summary of the components of broad income and adjusted broad income. Labour income plus asset income plus transfers from government and private sources = MONEY INCOME. Money income plus imputed asset income plus supplementary labour income plus shifted corporation tax plus grants to private institutions plus retained earnings = BASIC INCOME. Basic income minus government bond interest and transfers = BROAD INCOME. Broad income plus all government expenditure minus all government taxes = ADJUSTED BROAD INCOME.

(c) Assumptions about the Incidence of Taxes

It is possible to obtain different results by using differing assumptions in respect to shifting of indirect taxes. In this study the following set of assumptions has been used for the calculation of the incidence of corporation and social security taxes.

(i) *Corporation Taxes:* In respect to federal and provincial income taxes on corporation profits, three assumptions have been employed. Since theoretical arguments suggest that little or none of corporation taxes is shifted,[7] our primary computation of incidence is based on the assumption that 75 percent of corporation income taxes is borne by shareholders' profit and 25 percent is passed forward to consumers in the form of higher prices. However, since the empirical literature suggests that up to 100 percent of these taxes may be shifted, a secondary set of estimates is made on the assumption that only 25 percent of the tax is borne by shareholders and 75 percent is passed forward to consumers in higher prices. Results based on these two assumptions are reported in Section IV. For these two computations it is further assumed that a portion of corporate income taxes is passed on to the foreign buyer through the export of goods. Following Gillespie's practice, the calculation of this share is based on the ratio of the value of merchandise exports to gross domestic product. A third assumption was also used, namely that corporation taxes are borne by recipients of all forms of income from assets (except imputed income from owner-occupied housing). As this assumption yields a distribution similar to that of the first assumption, results based on this assumption are not reported in Section IV.

(ii) *Social Security Taxes:* The problem of shifting arises as well in respect to employer contributions to the Canada Pension Plan and the Unemployment Insurance Fund. Both economic theory and the weight of empirical evidence indicate that 100 percent of these employer contributions are shifted back to the employee and not borne by the employer.[8] For this reason, in the primary computation of incidence in this paper, all employer unemployment insurance and Canada Pension contributions are assumed to be borne by the employee. Because other studies of fiscal incidence have used an assumption of 50 percent shifting to employees of the employer contribution, estimates of incidence based on this assumption are also made in this study.

(iii) *Allocation of Shifted Taxes to Income Classes:* The portion of corporation income taxes which is assumed to be shifted forward to domestic consumers is distributed across the income classes on the basis of the fraction of total consumption consumed by that income class. The unshifted portion of corporation income tax is distributed on the basis of the fraction of total dividends

[7]See P. M. Mieszkowski, "Tax Incidence Theory: The Effect of Taxes on the Distribution of Income", *Journal of Economic Literature*, VII (December, 1969).

[8]See B. Brittain, *The Payroll Tax for Social Security* (Brookings, 1972), Chapters II and III, for an exhaustive treatment of the subject. Estimates from the University of Toronto *Quarterly Forecasting Model* indicate that over 90 percent of employers' U.I. and C.P.P. contributions are borne by employees in Canada.

received by that income class.[9] The shifted portion of employers' social security contributions is distributed on the basis of the fraction of total consumption of each income class; the unshifted portion is distributed on the basis of the fraction of social security contributions made by families of each income group.

(iv) *Distribution of Personal Income and Social Security Taxes:* The employees' share of social security contributions (Canada and Quebec Pension Plan, and unemployment insurance) have been distributed by income class according to the fraction of these contributions paid by that income class in 1970. Income taxes have been calculated on the basis of a tax algorithm.

(v) *Other Taxes: (Sales, Commodity, Estate, etc.):* Sales taxes have been distributed to income classes on the basis of the fractions of taxable commodities consumed by the classes; excise taxes on tobacco and alcoholic beverages are distributed on the basis of the fraction of these commodities consumed by each of the income classes. Other federal commodity taxes and import duties have been distributed on the basis of the fraction of taxed commodities consumed by each income class. Estate taxes are assumed to be borne entirely by the $15,000 plus income class.

(d) *Calculation of Benefits from Expenditure on Public Goods*

The estimation of the value and distribution of benefits from government expenditure on "pure public goods and services" poses conceptual problems. In the absence of a market-determined price for these services, their value is assumed to be the cost of providing the services, irrespective of the worth of these services to the recipients. Expenditures on public goods such as defence, internal administration, justice, and external affairs, to name a few, set or influence the domestic and external environment in which Canadians live, produce and consume. Such programs, the impact of which is diffused throughout the whole system, were grouped together as "general" expenditures. Since our market economy would not function in the absence of some of these general expenditures (legal system, standards, etc.) it is inherently impossible to allocate the benefits from these expenditures across income classes. Other items of general expenditure, while not inherently impossible to allocate across income groups, are extremely difficult to allocate because there exists no clear measure of the value attached by the different groups to these public goods. In the face of these difficulties, there would appear to be two basic ways to allocate these expenditures across income groups. The first of these is to regard all general expenditure as "social overhead expenditure", the value of which is reflected in broad income adjusted for all government expenditures *except* general expenditures. The implication of this assumption is that general expenditure should be *omitted* in the calculation of the redistributive impact of government expenditures. The second basic way to allocate these expenditures is to assume the existence for all income classes of a particular utility function for public and private goods and to allocate public goods expenditures on the basis of the marginal utility of public goods

[9]Unfortunately data on the distribution of dividends from Canadian corporations only were not available, and hence distribution is made on basis of total dividends.

calculated from this assumed utility function.[10] In most previous studies, it has been implicitly assumed that the elasticity of marginal utility with respect to disposable income is unity so that the imputed benefits of public goods are proportionate to disposable income. In some studies (e.g. Gillespie), it was assumed that the imputed benefits of public goods were distributed on the basis of broad income, implying that the elasticity of the marginal utility of public goods with respect to disposable income is somewhat greater than unity. Only in the papers by Aaron and McGuire and Maital has this elasticity been assumed to be significantly greater than unity.

In this paper for our primary computation of incidence we adopt Gillespie's procedure of allocating general expenditure across income classes on the basis of broad income. In addition, three alternative sets of calculations are made. In the first alternative benefits from general expenditures are assumed to be a social overhead cost, the benefits of which are already reflected in broad income; hence, these expenditure benefits are not imputed to any income group. In the second alternative, we assume that the elasticity of marginal utility with respect to disposable income is 1.55 and distribute general expenditures on this basis.[11] A third estimate is based on an elasticity of 2.0.

(e) *Distribution of Government Deficit or Surplus*

If governmental deficits or surpluses resulted simply in the alteration of the level of domestically held public debt, if no coersion is used in the marketing of this debt, and if this debt has no influence on interest rates, then the level of the government surplus or deficit is of no concern in a *static* study of total incidence. Even when part of this debt is in the form of money, as long as no inflation (deflation) results from the expansion (contraction) of the money supply, no account need be taken of surpluses or deficits in a static incidence study. The implicit assumption of previous static studies of total incidence has been that surpluses and deficits do *not* affect total incidence.

However, the size of the deficit of the public sector clearly does have an influence on real rates of interest and on the rate of price and wage inflation, however difficult these impacts are to measure.[12] In spite of the fact that the distributive impact of inflation may be large, it is not possible to incorporate this impact into a static study of the nature of this one. To the extent that the distributive effects of inflation in the year under consideration were different from the distributive effects of the expenditures and taxes calculated in this paper another source of error is added to the estimates of this paper.

[10]See H. Aaron and M. McGuire, "Public Goods and Income Distribution", *Econometrica* (Nov. 1970), for an elaboration of this argument. For a simple exposition and some calculations of the distribution of public good expenditures in Canada and the United States see Shlomo Maital, "Is Distributive Taxation a Myth?" (Kingston: Institute for Economic Research of Queens University, Discussion Paper No. 122).

[11]The estimate of 1.55 is made by Alan Powell in his article, "Postwar Consumption in Canada: A First Look at the Aggregates", *Canadian Journal of Economics and Political Science* (Nov. 1965, pp. 559–565). As this estimate appears rather low, an alternative calculation is made with the elasticity equal to 2.0.

[12]See, for example, Thad Mirer, "The Effects of Macroeconomic Fluctuations on the Distribution of Income", Madison: Institute for Research on Poverty, 1972.

Since the static estimates incorporate many sources of error, however, one more source of error may not be of great concern. However, if the changes in the tax and transfer system whose differential incidence is calculated in this paper also result in a relatively *large* change in budgetary deficit or surplus, then the static effect of these *changes* in the tax-transfer system calculated in this paper would seriously diverge from the true dynamic impact. Fortuitously, however, the net combined effect of the changes in the tax system (more revenue), the unemployment insurance system (higher cost) and the old age security system (higher cost) appears to have been to raise revenues by slightly more than expenditures in 1972–73, leaving some small amount of additional room for the changes in family allowances to go into effect in 1973–74. Hence the magnitude of the effect on the government deficit of the *changes* in the tax-transfer system under investigation in this paper is likely to be small and the static total incidence of these changes estimated in this paper is likely to be a reasonably accurate measure of the true incidence of these changes.

(f) *Transfer Payments*

Some government expenditures such as transfer payments and subsidies have a direct and measurable connection with the recipient. Those which can be readily associated with the families and individuals affected have been distributed on the basis of the relevant related series. Family allowances, OAS/GIS, and unemployment insurance benefits have been calculated on the basis of demographic, income and work characteristics; manpower and training allowances have been distributed on the basis of Manpower and Immigration survey data. All other direct transfers have been distributed on the basis of distribution of "other transfers" in the Survey of Consumer Finances.

No estimate of the effect of these direct transfers on relative wage rates is made. Similarly, no estimates of the effect of minimum wages and other labour standard legislation are made.

(g) *Summary of Assumptions*

Our primary computation of total incidence for 1970 presented in Section IV is based on the following crucial assumptions:

(i) 25 percent of corporation income taxes are shifted forward to consumers.

(ii) The employer's share of social security taxes is borne totally by the employees in respect of whom the tax was paid.

(iii) Estate taxes are borne entirely by those with incomes exceeding $15,000; commodity, sales and excise taxes are borne entirely by the consumers of those products; personal income taxes are borne entirely by the recipient of the income.

(iv) Costs of "private goods" provided by governments are distributed either on the basis of direct consumption of these services when the services are consumed directly by the public (e.g. health, education, etc.) or on the basis of the consumption of complementary private goods,

when the services are consumed indirectly by the public (e.g. highways, municipal services, etc.).

(v) Expenditures on "pure public goods" are allocated on the basis of broad income.

(vi) The effects of government deficits are ignored.

Secondary calculations of incidence are also provided in Section IV on the basis of the following assumptions:

(i) 75 percent of corporate income tax is shifted forward.

(ii) Only 50 percent of the employer's share of social security taxes is shifted to employees and 50 percent to consumers.

(iii) No alternatives were used.

(iv) No alternatives were used.

(v) Costs of pure public goods are unallocated in one secondary calculation and allocated on the basis of elasticity of marginal utility of public goods with respect to income equal to 1.55 and 2.0 in two further calculations.

(vi) No alternatives were used.

III Statistical Procedures and Sources of Data

The purposes of this Section are to outline the precise procedures used in the calculation of the direct effects of actual 1970 government tax, transfer and expenditure policies on the distribution of incomes, and to describe the data on which these calculations are based. The basic procedure, as outlined in the preceding section, involves the computation of the *control aggregates*, i.e., components of total broad income and adjusted broad income for 1970, and the distribution of these aggregates across the fifteen income categories. Procedures for simulating the effects of changes in federal personal income tax and transfer program changes which occurred after 1970 are found in Section V.

(a) *Calculation of Control Aggregates for Primary Calculation of Incidence*

From National Accounts data for 1970, the major components of broad income and adjusted broad income are calculated in Table 1. These control aggregates have been adjusted from the national accounts figures to reflect the differences in the concepts of the components used for this study and those used for the national accounts. A summary of the major adjustments is given here.[13] Line numbers given in brackets below refer to line numbers in Table 1.

—Wages and salaries (1) exclude supplementary labour income which is given in lines 19 and 20.

—Interest (8) includes bond, deposit, mortgage, and annuity interest plus interest and dividends received from non-residents. Interest on consumer debt is also included.

—Retirement pensions (11) include private pensions, pensions paid by employers, and government superannuation.

[13]Further details are available in appendices A to D which are available from the author on request.

TABLE 1

ESTIMATED BASIC INCOME, BROAD INCOME, AND ADJUSTED BROAD INCOME OF FAMILY UNITS, 1970

	Primary Estimate	
1. Wages and salaries	$44,612M	
2. Military pay and allowances	732M	
3. Net income from farm operations	1,011M	
4. Net income: non-farm	3,569M	
5. Non-residential paid net rents	234M	
6. Residential non-farm paid rent	162M	
7. Farm residential paid rent	21M	
8. Interest	2,334M	
9. Dividends	1,061M	
10. Other investment income	86M	
11. Private pensions	850M	
12. Transfers from government, private sector	5,230M	
A. Family money income		$59,902M
14. Imputed rent—farm	141M	
15. Imputed rent—non-farm	424M	
16. Imputed interest	578M	
17. Investment income—life insurance companies	918M	
18. Investment income—trusteed pension funds	410M	
19. Supplementary labour income	2,431M	
20. Supplementary income—military	174M	
21. Less: Employers' social security contributions	−908M	
22. Food and fuel consumed on farms	128M	
23. Value of farm inventory change	23M	
24. Transfers from corporations—bad debts	51M	
25. Grants to post-secondary institutions	1,017M	
26. Grants to benevolent associations	483M	
27. Corporation retained earnings	1,595M	
28. Unshifted portion of corporate income tax ($\frac{3}{4}$)	1,380M	
B. Total non-cash income		$ 8,845M
C. Basic income (A plus B)		$68,747M
31. Less: Transfer payments from government	−6,807M	
32. Less: Government bond interest received by individuals	−748M	
D. Equals: Broad income (i.e. excluding government)		$61,192M
34. Less: Total taxes (adjusted)	−26,229M	
35. Plus: Government expenditure	+28,258M	
E. Equals: Adjusted broad income		$63,622M
F. Number of families and unattached individuals	6,764,000	
G. Broad income per family (dollars) D/F	$9,047	
H. Adjusted broad income per family (dollars) E/F	$9,406	

Assumptions: 100 percent of employer share of social security contributions are borne by the employee; 25 percent of corporation income tax shifted to consumers.

—Transfers (12) includes transfers from non-residents and corporations as well as governments.
—Family money income (A) is the sum of items 1 to 12 inclusive.
—Social security contributions of employers (21) are included on the assumption that total contributions (both employee and employer component) are borne by the employee. See Section II for a discussion of this issue.
—Corporation retained earnings (27) include profit and interest of mutual non-life insurance companies.
—Unshifted portion of the corporation income tax (28) is calculated on the assumption of 25 percent forward shifting. See discussion in Section II.
—Total non-cash income (B) is the sum of items 14 to 28.
—Basic income (C) is the sum of family money income plus non-cash income (A plus B).
—All transfer payments (31) are deducted.
—Government bond interest (32) is deducted as it is regarded as a transfer from the macroeconomic point of view.
—Broad income (D) is basic income (C) net of the effect of government transfers and taxes (31–32).
—Total taxes (34), adjusted for intergovernmental transfers and shifted portions, are subtracted.
—Government expenditures (35) on goods, services and transfers are added.
—Adjusted broad income (E) is equal to broad income plus the net impact of the government sector (D - 34 + 35).

Note that in the alternative calculations of incidence based on secondary assumptions about shifting, several components of Table 1 would appear differently. Since the alternative assumption for employer share of social security taxes is that 50 percent of these taxes are shifted forward to consumers, employers' social security contributions (line 21) would only be half as large. Since the alternative assumption for corporate income tax is that it is 75 percent shifted to consumers, the unshifted portion of this tax (line 28) would be reduced under the alternative assumption. Finally, under the alternative assumption in which government expenditures on some public goods are disregarded entirely, government expenditure (line 35) would be considerably reduced.

(b) *Distribution of National Accounts Aggregates by Income Category*

The major problem in any fiscal incidence study is to distribute aggregate taxes and expenditures accurately across income categories. Fortunately, two major sources of data are available in Canada which permit a reasonably accurate distribution of most components of income, and the components of expenditure. These sources are the Survey of Consumer Finances (1969) from which we derived reasonably accurate distributions of most components of family money income and many components of non-cash income. From the Family Expenditure Survey, 1969, we were able to obtain a good distribution of some items of

non-cash income and of household expenditures from which the distribution of the benefits of many expenditure programs and of commodity and realty taxes could be estimated. The precise series used for the distribution of National Accounts aggregates are listed in Table 2; a description of these series, the methods by which they were manipulated and an assessment of possible biases is given in the following paragraphs.

The major source of data for the distribution of money and non-cash income aggregates is the Survey of Consumer Finance, 1969 (C.F.S.). This survey provides data on the sources of money income, assets, personal income taxes paid and some labour force and demographic characteristics of members of the economic family. The survey population consists of approximately 97 percent of the total Canadian population. Each sample record contains a weight which permits the sample to be inflated to represent the survey population. These weights were adjusted by further equal proportional weights to permit the blowing up of the sample to represent the total Canadian population. Although this was the most satisfactory procedure that could be devised, it appears that the average income of the excluded population (Indians on reserves, those living in institutions, part year households, and residents of the Yukon and Northwest Territories) is lower than that of the covered population. Hence the estimated income distribution is skewed slightly to the right (higher end) of the actual distribution. However, the breakdown of the sources of income *within* income classes obtained from these data should be an accurate representation of the true breakdown.

TABLE 2

SERIES USED TO DISTRIBUTE CONTROL TOTALS AND DATA SOURCES

Control total[1]	*Distributive series used*[2]
1. Wages and salaries	Wages and salaries
2. Military pay and allowances	Military pay
3. Net income: farm	Self-employed income: farm
4. Net income: non-farm unincorporated business	Self-employed income: non-farm
5. Non-residential paid net rents	Income from assets: total
6. Residential paid net rents	Net rent
7. Farm paid net rents	Number of families, farm, self-employed
8. Interest	Interest
9. Dividends	Dividends
10. Other asset income	Income from assets except interest, dividends, and income from roomers
11. Private pensions	Retirement pensions: private
12. Transfers:	
family allowances	Family allowances
old age security	Old age security including guaranteed supplement
unemployment insurance	Unemployment insurance benefits
other public and private	Other transfer income
13. *Family money income*	
14. Imputed rent: farm	Number of families, farm, self-employed
15. Imputed farm, non-farm	Value of homes
16. Imputed interest	Bank interest, DNR[3]
17. Investment income: life insurance, etc.	Personal insurance annuities, FES[4]
18. Investment income: trusteed pension	Retirement savings pensions, DNR

Table 2 continued

Control total[1]	*Distributive series used*[2]
19. Supplementary labour income: civilian	Wages and salaries
20. Supplementary labour income: military	Military pay and allowances
21. Employers payroll taxes shifted forward	Total current consumption, FES
22. Food, fuel consumed on farm	Number of families: farm, self-employed
23. Farm inventory change	Income from farm operations
24. Transfers from corporations	Consumption under $6,000, FES
25. Grants to post-secondary institutions	Post-secondary students, special survey[5]
26. Grants to benevolent associations	Number of families
27. Retained earnings	Dividends[8]
28. Unshifted corporation income tax	Dividends[8]
29. *Total non-cash income*	
30. *Basic income* (13 + 29)	
31. Transfers:	
family allowances	Family allowances
old age security	Old age security, guaranteed income supplement
unemployment insurance	Unemployment insurance benefits
other direct transfers	Other transfer income
post-secondary education	Number of Post-Secondary Students, Special Survey
grants to private institutions	Number of families
32. Government bond interest	Interest[8]
33. *Broad income* (30–31–32)	
34. *Federal taxes*	
Corporation income tax:	
unshifted	Dividends[8]
shifted	Total current consumption, FES
Manufacturers sales tax	Consumption of taxable commodities, FES
Excise:	
alcohol	Alcoholic beverage consumption, FES
tobacco	Tobacco consumption, FES
other	Total current consumption, FES
Customs duties	Total current consumption, FES
Federal pension contributions	Security, all governments, FES
Payroll tax: UI + CPP	Security, all governments, FES
Estate tax	Allocated to families with incomes G.T. $15,000
Personal income tax	Calculated from reported income
Provincial and local taxes	
Personal income tax	Calculated from reported income
Corporation tax:	
unshifted	Dividends[8]
shifted	Total current consumption, FES
Total sales and excise	Consumption of taxable commodities, FES
Succession duties	Allocated to families with incomes G.T. $15,000
Hospital insurance premiums	Prepaid medical-health premia, FES
Property taxes:	
persons	Property tax paid, FES
business	Asset income, total
Motor vehicle licences:	
persons	Motor vehicle registration, FES
business	Asset income, total
Amusement tax	Expenditure on recreation, FES
Business taxes	Asset income, total
Poll tax	Number of families

Table 2 continued

Control total[1]	*Distributive series used*[2]
School fees	Number of post-secondary students, special survey
Royalties	Asset income, total
Indirect local taxes, miscellaneous	Total current consumption, FES
Public service pension contributions	Security, all governments, FES
Quebec pension plan contributions	Security, all governments, FES
Workmens compensation contributions	Number of families, total
35. *Federal expenditures*	
Highway transport:	
passenger cars	Expenditure on motor vehicle operation, FES
trucks	Expenditure on transportable goods, FES
Other transport:	
persons	Expenditure on transportation services, FES
business	Expenditure on transportable goods, FES
Adult occupational training allowances	Training allowances, manpower and immigration[6]
Indian and Eskimo education	Number of Indian and Eskimo families, IAND[7]
Post secondary education	Number of post-secondary students, special survey
Bilingualism	Number of families, total
Local schools	Number of children, 5 to 16 years
Health, medical, hospital, sanitation	Number of families, total
Pensions: veterans and other	Other transfer income
Old age security and supplement	Old age security and GIS
Family allowances	Family allowances
Unemployment insurance	Unemployment insurance
Other welfare	Other transfer income
Indian and Eskimo welfare	Number of Indian and Eskimo families under $5,000, IAND
CSB and marketable security interest	Interest[8]
General government (public goods)	Broad income (see text)
Provincial and local expenditures	
Highways:	
cars	Expenditure on motor vehicle operation, FES
trucks	Consumption of transportable goods, FES
Other transport:	
persons	Consumption of transport services, FES
business	Consumption of transportable goods, FES
Post-secondary education	Number of post-secondary students, FES
Primary and secondary education	Number of children, 5 to 16 years
Other education and training	Number of families with income under $6,000
Health, medical, hospital, sanitation	Number of families, total
Social assistance	Other transfer income
Marketable securities interest	Interest[8]
General government (public goods)	Broad income (see text)
36. *Adjusted broad income* (33 − 34+ 35)	

[1]Item numbers on national accounts control totals correspond to those in Table 1.

[2]Unless otherwise indicated, data drawn from Survey of Consumer Finance, 1969.

[3]DNR indicates data drawn from Taxation Statistics, Dept. of National Revenue.

[4]FES indicates data drawn from 1969 Family Expenditure Survey.

[5]Special Survey indicates data drawn from survey of post-secondary students, 1968–9, excluding nursing, teacher training and "other" students.

[6]M and 1 indicates data drawn from special surveys conducted by Department of Manpower and Immigration.

[7]IAND indicates data drawn from administrative data of Department of Indian Affairs.

[8]Alternative calculation also made using total income from assets.

The survey data permit an accurate decomposition of family money income of each income group into ten components: wages and salaries, military pay and allowances, net income from farming, net income from unincorporated business, net rents, other asset income, private pensions, family allowances, old age security and guaranteed income supplement receipts, and other direct transfers. Although other asset income may be further decomposed into interest, dividends, and other income from assets, the reliability of interest and dividend data is suspect. No data on capital gains are provided.

The primary source of data used to distribute commodity taxes and government expenditure on essentially private goods is the 1969 Family Expenditure Survey (FES). This survey, which has a somewhat less universal sampling frame than the CFS, provides detailed data on expenditures, and assets and gross data on incomes of households in Canada in 1969. Since FES data are collected on a *household* basis rather than an economic family basis, it is not possible to effect a completely accurate match between the two survey samples. The problem of matching is especially severe for unattached individuals not related by blood or marriage to other members in the household in which they reside, e.g. roomers, boarders, and persons living in collective residences such as universities and old people's homes. A further problem arises because the geographic weighting of the FES sampling frame is different from that of the CFS frame.

In order to match income and expenditure data, however, we were forced to ignore these differences in the two sampling frames and merge these two data files in the following way. Average expenditures on each item were calculated for *households* in narrow total household income cells varying in width from $250 to $1,000 depending on the number of observations. These average expenditures for each cell were then assigned to all *economic families* with total family income in the same range, thus creating a single "bastard" micro-data tape for 1969. The 1970 "bastard" micro-data tape was then created by the following method:

1. Each of the income components reported by each member of the economic family was multiplied by the aggregate rate of growth of the income component from 1969 to 1970.
2. Revised 1970 sample weights were applied to each observation.
3. Aggregate component incomes were calculated and compared with 1970 National Accounts estimates. When the aggregate estimated component total differed from the National Accounts total, each micro-data component was then adjusted to reflect this difference and a revised micro-data tape constructed which contained income data which would aggregate correctly to national accounts data.
4. Revised 1970 total family income was calculated for each family record. Consumption components for 1970 were calculated by multiplying the 1969 component by the ratio of 1970 revised total family income to 1969 total family income. Thus the aggregate consumption components do not necessarily equal the national accounts total. However, the distribution of these components across 1970 money income categories should be correct.
5. Revised family money income for 1970 was used to group the micro-data records into money income categories. Sample sizes for these categories are shown in Table 3.

TABLE 3

"BASTARD" CFS MICRO-DATA FILE:
SAMPLE SIZE BY 1970 FAMILY MONEY INCOME CATEGORY

Income Category	*Sample Size*
Under $1,000	326
$ 1,000–1,499	435
1,500–1,999	331
2,000–2,499	378
2,500–2,999	436
3,000–3,499	414
3,500–3,999	367
4,000–4,499	400
4,500–4,999	377
5,000–5,499	396
5,500–5,999	407
6,000–6,999	789
7,000–7,999	832
8,000–8,999	741
9,000–9,999	624
10,000–11,999	981
12,000–14,999	797
15,000–24,999	642
25,000 and over	127
Total	9,800

Because of a lack of data on education and training on the "bastard" CFS/FES micro-data tape, different data sets were used to distribute the benefits of expenditure on post-secondary education, adult occupational training, and education of native people. These data sets are described in the footnotes to Table 2.

Because of severe under-reporting of personal income tax, unemployment insurance, family allowance and old age security benefits on the CFS survey, the dollar amounts of these items were calculated for each family unit on the basis of demographic and economic data. The tables of Section IV show the distribution of these calculated benefits. Other transfer payments were also seriously under-reported in the Survey of Consumer Finances. As no reliable method of imputing these transfers could be devised, the tables of Section IV show the distribution of *reported* benefits, adjusted to the National Accounts control totals. The resulting distribution considerably under-estimates the transfers to low income groups but the extent of the bias is not known.

In the primary estimates, "general government" expenditures are distributed on the basis of broad income. In addition, three secondary distributions are made. In the first, expenditures on general government are assumed to be social overhead costs and are not included as a direct benefit. In the second, benefits of general government expenditures are distributed on the assumption that the income elasticity of the marginal utility of money is -1.55 and thus that the elasticity of the marginal utility of expenditures on pure public goods is 1.55. A third estimate is also made assuming that this elasticity is 2.0.

IV Estimates of 1970 Broad Income and Adjusted Broad Income by Income Category

In Part (a) of this section the basic estimates of broad income and adjusted broad income for 1970 are presented. Parts (b) and (c) are devoted to a preliminary analysis of these data. Part (d) examines the sensitivity of the estimates to the assumptions on which they are based.

(a) *The Primary Estimates*

The primary estimates of the dollar amounts of money, broad and adjusted broad income by income class are presented in Table 4. For this primary estimate it has been assumed that one quarter of corporate income taxes is shifted forward to consumers, that employees bear the full amount of employer social security contributions and that benefits of expenditures on pure public goods are distributed on the basis of broad income. In Table 5 the percentage distribution of the components of adjusted broad income across money income classes is given. In Table 6 each of the components is expressed as a percentage of mean broad income for each income class. A summary of selected indicators of the distributive effect of the government policy is given in Table 7 and the distribution of components of federal expenditure is shown in Table 8.

The assumptions with respect to tax shifting and the distribution of benefits of pure public goods are the same for Tables 4 to 8. Sources of data and methods of computation for these tables have been outlined in Sections II and III, and need no further elaboration here.

(b) *Analysis of the Effect of Federal Programs on the Distribution of Incomes*

Although all levels of government are involved in the redistribution of income through their levies of taxes, purchases of goods and services and through transfer payments, this section highlights the effects of *federal* government actions on the incomes of families and unattached individuals.

Prior to an examination of the figures, it may be useful to define the technical terms used in the analysis. *Average tax rate*, expressed as a percentage, is defined as the ratio of total tax payments to broad income by family money income category. *Expenditure incidence,* also expressed as a percentage, is the ratio of benefits from government expenditure and transfer programs to broad income. As noted earlier, broad income is income before the inclusion of government benefits and before deduction of taxes. *Net fiscal incidence* is the difference between expenditure and tax incidence.

Data from Table 6 indicate that families with family money incomes of less than $10,000 were net beneficiaries of federal programs and that on the average, those with incomes above $10,000 paid more in federal taxes than they received in federal government benefits. Both in absolute and relative terms, net benefits to groups with family money incomes below $6,000 were substantial. These ranged in size from one and one-half times the amount of broad income for the below $2,000 income group to about one-sixth of broad income for the $5,000–6,000 family money income group. On the other hand, the group with incomes

TABLE 4

AGGREGATE FAMILY MONEY INCOME, BROAD INCOME, ADJUSTED BROAD INCOME AND NUMBER OF FAMILIES, 1970

Millions of dollars

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
1. Wages and salaries	178.4	406.0	646.9	1168.8	1780.0	2422.4	2685.6	3560.0
2. Military pay and allowances	1.0	3.0	2.0	11.1	18.1	73.2	100.3	64.2
3. Net income: farm	42.0	82.8	86.8	73.9	58.8	48.9	39.9	55.9
non-farm unincorporated business	15.7	25.0	82.1	82.8	93.9	122.8	139.9	162.0
5. Paid net rents	15.4	15.9	31.6	21.0	17.9	21.8	23.1	30.9
6. Interest dividends and other investment income	44.9	78.0	152.1	128.1	113.1	135.1	178.2	170.2
7. Private pensions	23.0	53.0	75.1	85.1	60.1	72.1	54.1	64.1
8. Family and youth allowances	15.2	16.2	28.5	34.2	36.1	48.4	51.3	58.9
9. OAS—GIS	314.3	236.8	324.7	189.2	141.3	107.1	91.8	71.7
10. Unemployment insurance benefits	44.2	48.9	60.3	54.9	48.9	50.2	49.6	50.2
11. Transfers (government, corporate, non-resident)	130.1	206.2	281.1	272.0	187.9	158.9	161.6	117.0
12 *Family money income*	824.3	1171.7	1771.1	2121.0	2556.1	3260.9	3575.3	4405.2
13. Imputed rent	55.6	34.9	43.9	36.0	37.5	32.1	36.2	39.2
14. Imputed interest	58.2	62.0	58.6	48.1	45.0	40.9	36.9	29.2
15. Life insurance and trusteed pension fund	17.4	12.6	25.7	37.1	53.8	76.7	92.6	93.0
16. Supplementary labour income	10.0	22.8	35.7	66.3	101.3	149.4	170.2	209.3
17. Less: Social security contributions shifted[1]	−3.6	−8.3	−13.2	−23.8	−36.2	−49.3	−54.7	−72.5
18. Food + fuel + farm inventory change	25.6	15.9	20.1	16.0	13.3	7.3	7.3	8.1
19. Bad debt transfers from corporations	8.4	6.4	10.8	12.0	13.3	0.0	0.0	0.0
20. Grants—Post-secondary institutions	54.0	47.7	57.0	82.9	97.3	93.4	96.3	81.7
21. Grants—Benevolent associations	47.7	31.4	35.8	33.0	32.3	35.3	33.5	36.5
22. Corporate net earnings	20.6	35.7	69.7	58.7	51.8	61.9	81.7	78.0
23. Unshifted corporate income tax[2]	17.8	30.9	60.3	50.8	44.8	53.5	70.7	67.5
24. *Total non-cash income*	311.6	292.2	404.4	417.1	454.4	501.1	570.6	569.9
25. Government bond interest received	−9.6	−16.8	−32.7	−27.5	−24.3	−29.0	−38.3	−36.6
26. Transfer payments from government	−610.4	−594.9	−797.8	−676.4	−550.9	−499.3	−490.1	−420.3

27. *Broad income*	515.9	852.3	1344.9	1834.2	2435.4	3233.7	3617.5	4518.2
28. Less: Total federal taxes	145.2	157.7	317.5	406.7	519.3	679.5	738.6	900.8
29. Less: Total provincial and local taxes	289.4	264.1	447.0	475.7	518.8	648.1	711.6	864.7
30. Plus: Total federal expenditures[3]	977.3	795.6	1081.4	937.0	894.9	920.4	945.9	983.4
31. Plus: Total provincial and local expenditures	519.6	464.2	654.8	720.5	753.0	915.4	965.4	1080.3
32. *Adjusted broad income*	1578.2	1690.3	2316.6	2609.3	3045.1	3741.9	4078.6	4816.3
33. *Number of families* (thousands)	667.0	439.9	500.8	462.2	452.1	494.0	469.0	510.9

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
1. Wages and salaries	3604.6	3470.8	3372.7	2931.0	2801.6	2248.4	13334.5	44612.0
2. Military pay and allowances	61.2	50.1	87.3	41.1	37.1	29.1	153.4	732.1
3. Net income: farm	46.9	35.0	21.9	25.0	27.9	26.0	339.3	1011.1
non-farm unincorporated business	126.0	149.9	287.7	96.0	76.0	82.1	2027.2	3569.0
5. Paid net rents	33.6	22.5	19.0	16.3	11.8	11.7	124.5	417.0
6. Interest dividends and other investment income	212.3	130.2	152.1	165.0	120.1	142.0	1559.5	3481.0
7. Private pensions	30.0	34.0	30.0	22.0	12.0	37.1	198.2	849.8
8. Family and youth allowances	56.9	51.3	44.6	32.3	27.5	20.9	94.9	617.1
9. OAS—GIS	67.8	51.6	39.1	41.2	22.9	36.3	126.1	1861.8
10. Unemployment insurance benefits	48.2	43.5	38.2	28.8	24.1	20.1	85.1	695.1
11. Transfers (government, corporate, non-resident)	115.5	106.5	47.3	31.5	64.4	11.9	164.3	2056.2
12. *Family money income*	4403.2	4145.4	4139.8	3430.1	3225.5	2665.6	18206.9	59902.1

Table 4—continued

13. Imputed rent	35.7	28.6	31.0	20.9	24.3	21.7	87.4	565.0
14. Imputed interest	23.7	19.0	14.4	10.5	10.5	10.5	110.5	578.0
15. Life insurance and trusteed pension fund	92.7	108.4	92.7	82.4	53.6	70.7	418.7	1328.0
16. Supplementary labour income	211.0	201.1	204.5	169.5	161.5	129.4	763.1	2605.0
17. Less: Social security contributions shifted[1]	−73.4	−70.6	−68.6	−59.7	−57.0	−45.8	−271.4	−908.0
18. Food + fuel + farm inventory change	6.9	3.1	3.0	1.7	3.3	3.7	15.8	151.0
19. Bad debt transfers from corporations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0
20. Grants—Post-secondary institutions	79.2	41.8	45.8	24.4	32.5	35.1	148.0	1017.0
21. Grants—Benevolent associations	33.0	28.0	25.7	19.6	17.0	13.4	61.1	483.4
22. Corporate net earnings	97.3	59.7	69.7	75.6	55.0	65.1	714.6	1595.0
23. Unshifted corporate income tax[2]	84.2	51.6	60.3	65.4	47.6	56.3	618.2	1380.0

AGGREGATE FAMILY MONEY INCOME, BROAD INCOME, ADJUSTED BROAD INCOME AND NUMBER OF FAMILIES, 1970
Millions of dollars

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
24. *Total non-cash income*	590.3	470.6	478.5	410.3	348.3	360.2	2666.0	8845.4
25. Government bond interest received	−45.6	−28.0	−32.7	−35.5	−25.8	−30.5	−335.1	−748.0
26. Transfer payments from government	−405.1	−326.6	−242.4	−178.8	−190.8	−138.1	−685.5	−6807.6
27. *Broad income*	4542.8	4261.4	4343.1	3626.1	3357.1	2857.1	19852.3	61191.9
28. Less: Total federal taxes	921.0	852.2	884.2	735.2	660.7	563.3	4381.7	12863.4
29. Less: Total provincial and local taxes	893.8	809.8	814.8	702.4	613.6	529.7	4383.7	12967.2
30. Plus: Total federal expenditures[3]	966.7	831.1	779.0	629.9	575.3	486.8	3057.2	14861.7
31. Plus: Total provincial and local expenditures	1033.0	921.0	870.8	654.0	585.6	471.4	2792.5	13401.2
32. *Adjusted broad income*	4727.6	4351.5	4293.9	3472.5	3243.6	2722.3	16936.5	63624.1
33. *Number of family units* (thousands)	462.2	391.3	360.2	273.7	237.9	187.9	854.9	6764.1

Source: See Section 3 and Appendices

Notes: [1] ½ Employers Social Security Contributions shifted forward

[2] ¼ Corporation Income Tax shifted forward

[3] General Expenditures distributed on basis of Broad Income

TABLE 5

HORIZONTAL PERCENTAGE DISTRIBUTION OF BROAD INCOME, ADJUSTED BROAD INCOME, THEIR COMPONENTS AND NUMBER OF FAMILIES, 1970

Percent

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
Money income excluding transfers	0.6	1.2	2.0	2.9	3.9	5.3	5.9	7.5
Transfers	9.6	9.7	13.3	10.5	7.9	7.0	6.8	5.7
Family money income	1.4	2.0	3.0	3.5	4.3	5.4	6.0	7.4
Non-cash income	3.5	3.3	4.6	4.7	5.1	5.7	6.5	6.4
Bond interest (government)	1.3	2.2	4.4	3.7	3.3	3.9	5.1	4.9
Transfers from governments	9.0	8.7	11.7	9.9	8.1	7.3	7.2	6.2
Broad income[1]	0.8	1.4	2.2	3.0	4.0	5.3	5.9	7.4
Federal taxes[2]	1.1	1.2	2.5	3.2	4.0	5.3	5.7	7.0
Provincial and local government taxes	2.2	2.0	3.4	3.7	4.0	5.0	5.5	6.7
Federal expenditures[3]	6.6	5.4	7.3	6.3	6.0	6.2	6.4	6.6
Provincial and local government expenditures	3.9	3.5	4.9	5.4	5.6	6.8	7.2	8.1
Adjusted broad income	2.5	2.7	3.6	4.1	4.8	5.9	6.4	7.6
Number of family units	9.9	6.5	7.4	6.8	6.7	7.3	6.9	7.6

Table 5—continued

HORIZONTAL PERCENTAGE DISTRIBUTION OF BROAD INCOME, ADJUSTED BROAD INCOME, THEIR COMPONENTS AND NUMBER OF FAMILIES, 1970

Percent

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
Money income excluding transfers	7.5	7.1	7.3	6.0	5.6	4.7	32.4	100.0
Transfers	5.5	4.8	3.2	2.6	2.7	1.7	9.0	100.0
Family money income	7.4	6.9	6.9	5.7	5.4	4.4	30.4	100.0
Non-cash income	6.7	5.3	5.4	4.6	3.9	4.1	30.1	100.0
Bond interest (government)	6.1	3.7	4.4	4.7	3.5	4.1	44.8	100.0
Transfers from governments	6.0	4.8	3.6	2.6	2.8	2.0	10.1	100.0
Broad income[1]	7.4	7.0	7.1	5.9	5.5	4.7	32.4	100.0
Federal taxes[2]	7.2	6.6	6.9	5.7	5.1	4.4	34.1	100.0
Provincial and local government taxes	6.9	6.2	6.3	5.4	4.7	4.1	33.8	100.0
Federal expenditures[3]	6.5	5.6	5.2	4.2	3.9	3.3	20.6	100.0
Provincial and local government expenditures	7.7	6.9	6.5	4.9	4.4	3.5	20.8	100.0
Adjusted broad income	7.4	6.8	6.7	5.5	5.1	4.3	26.6	100.0
Number of family units	6.8	5.8	5.3	4.0	3.5	2.8	12.6	100.0

Source: Table 4.

Notes: [1]Employers Social Security Contributions assumed 100 percent shifted to employees.

[2]One quarter of Corporate Income Tax shifted to consumers.

[3]General expenditures distributed on basis of broad income.

TABLE 6

COMPONENTS OF INCOME EXPRESSED AS PERCENTAGE OF MEAN BROAD INCOME BY INCOME CLASS, 1970

Percent

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
Money income excluding transfers	62.1	77.9	80.0	85.6	88.0	89.6	89.0	90.9
+ Transfers (government, corporate, non-residents)	97.7	59.6	51.6	30.0	17.0	11.3	9.8	6.6
= Family money income	159.8	137.5	131.7	115.6	105.0	100.8	98.8	97.5
+ Non-cash income	60.4	34.3	30.1	22.7	18.7	15.5	15.8	12.6
− Bond interest (government)	−1.9	−2.0	−2.4	−1.5	−1.0	−0.9	−1.1	−0.8
− Transfers from governments	−118.3	−69.8	−59.3	−36.9	−22.6	−15.4	−13.5	−9.3
= Broad income[1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
− Federal government taxes[2]	28.1	18.5	23.6	22.2	21.3	21.0	20.4	19.9
− Provincial and local government taxes	56.1	31.0	33.2	25.9	21.3	20.0	19.7	19.1
+ Federal government expenditures[3]	189.4	93.3	80.4	51.1	36.7	28.5	26.1	21.8
+ Provincial and local government expenditures	100.7	54.5	48.7	39.3	30.9	28.3	26.7	23.9
= Adjusted broad income	305.9	198.3	172.2	142.3	125.0	115.7	112.7	106.6
Net fiscal incidence: Federal	161.3	74.8	56.8	28.9	15.4	7.4	5.7	1.9
Provincial and local	44.6	23.5	15.5	13.2	9.6	8.3	7.0	4.8

Table 6 continued

COMPONENTS OF INCOME EXPRESSED AS PERCENTAGE OF MEAN BROAD INCOME BY INCOME CLASS, 1970

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
Money income excluding transfers	90.6	91.3	91.4	90.9	91.9	90.2	89.3	89.3
+ Transfers (government, corporate, non-residents)	6.4	5.9	3.9	3.7	4.1	3.1	2.4	8.5
= Family money income	96.9	97.3	95.3	94.6	96.1	93.3	91.7	97.9
+ Non-cash income	13.0	11.0	11.0	11.3	10.4	12.6	13.4	14.5
− Bond interest (government)	−1.0	−0.7	−0.8	−1.0	−0.8	−1.1	−1.7	−1.2
− Transfers from governments	−8.9	−7.7	−5.6	−4.9	−5.7	−4.8	−3.5	−11.1
= Broad income[1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
− Federal government taxes[2]	20.3	20.0	20.4	20.3	19.7	19.7	22.1	21.0
− Provincial and local government taxes	19.7	19.0	18.8	19.4	18.3	18.5	22.1	21.2
+ Federal government expenditures[3]	21.3	19.5	17.9	17.4	17.1	17.0	15.4	24.3
+ Provincial and local government expenditures	22.7	21.6	20.0	18.0	17.4	16.5	14.1	21.9
= Adjusted broad income	104.1	102.1	98.9	95.8	96.6	95.3	85.3	104.0
Net fiscal incidence: Federal	1.0	−0.5	−2.5	−2.9	−2.6	−2.7	−6.7	3.3
Provincial and local	3.0	2.6	1.2	−1.4	−0.9	−3.0	−8.0	0.7

Source: Table 4.
Notes: See Table 5.

TABLE 7

SUMMARY OF SELECTED INDICATORS OF INCOME, TAXES AND INCIDENCE, 1970

Family Money Income Class		$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
1. Family money income[a]	$M	824.3	1171.7	1771.7	2121.0	2556.1	3260.9	3575.3	4405.2
2. Broad income[b]	$M	515.9	852.3	1344.9	1834.2	2435.4	3233.7	3617.5	4518.2
3. Adjusted broad income[c]	$M	1578.2	1690.3	2316.6	2609.3	3045.1	3741.9	4078.6	4816.3
4. Total tax payments	$M	434.5	421.7	764.4	882.4	1038.1	1327.6	1450.2	1765.5
(i) Federal	$M	145.2	157.7	317.5	406.7	519.3	679.5	738.6	900.8
(ii) Provincial and local	$M	289.4	264.1	447.0	475.7	518.8	648.1	711.6	864.7
5. Total government expenditures	$M	1496.8	1259.7	1736.1	1657.5	1647.8	1835.7	1911.3	2063.6
(i) Federal	$M	977.3	795.6	1081.4	937.0	894.9	920.4	945.9	983.4
(ii) Provincial and local	$M	519.6	464.2	654.8	720.5	753.0	915.4	965.4	1080.3
6. Number of family units	000	667.0	439.9	500.8	462.2	452.1	494.0	469.0	510.9
7. Average family money income	$	1235.8	2663.4	3536.7	4588.5	5653.8	6601.0	7623.2	8622.3
8. Average broad income	$	773.4	1937.2	2685.8	3968.0	5386.7	6545.8	7713.1	8843.5
9. Average adjusted broad income	$	2366.0	3842.0	4626.2	5644.7	6735.3	7574.5	8696.3	9427.0
10. Average taxes—all governments	$	651.5	958.6	1526.5	1908.9	2296.2	2687.4	3092.1	3455.6
11. Average federal taxes	$	217.6	358.4	634.0	879.9	1148.6	1375.4	1574.7	1763.1
12. Average provincial and local taxes	$	433.8	600.2	892.5	1029.1	1147.5	1312.0	1517.3	1692.5
13. Average government expenditures—all governments	$	2244.1	2863.3	3467.0	3585.7	3644.7	3716.0	4075.3	4039.1
14. Average federal expenditures	$	1465.2	1808.3	2159.4	2027.0	1979.3	1863.1	2016.9	1924.7
15. Average provincial and local expenditure	$	778.9	1055.0	1307.5	1558.6	1665.4	1852.9	2058.4	2114.4
16. Effective tax rate using B.I.—all governments[d]	%	84.2	49.5	56.8	48.1	42.6	41.1	40.1	39.1
(i) Federal	%	28.1	18.5	23.6	22.2	21.3	21.0	20.4	19.9
(ii) Provincial and local	%	56.1	31.0	33.2	25.9	21.3	20.0	19.7	19.1
17. Effective tax rate using A.B.I.—all governments[e]	%	27.5	25.0	33.0	33.8	34.1	35.5	35.6	36.7
(i) Federal	%	9.2	9.3	13.7	15.6	17.1	18.2	18.1	18.7
(ii) Provincial and local	%	18.3	15.6	19.3	18.2	17.0	17.3	17.4	18.0
18. Expenditure incidence using B.I.—all governments[f]	%	290.1	147.8	129.1	90.4	67.7	56.8	52.8	45.7
(i) Federal	%	189.4	93.3	80.4	51.1	36.7	28.5	26.1	21.8
(ii) Provincial and local	%	100.7	54.5	48.7	39.3	30.9	28.3	26.7	23.9
19. Expenditure incidence using A.B.I.—all governments[g]	%	94.8	74.5	74.9	63.5	54.1	49.1	46.9	42.8
(i) Federal	%	61.9	47.1	46.7	35.9	29.4	24.6	23.2	20.4
(ii) Provincial and local	%	32.9	27.5	28.3	27.6	24.7	24.5	23.7	22.4
20. Distribution of net fiscal amount—all governments[h]	$M	1062.3	838.0	971.7	775.1	609.7	508.2	461.2	298.1
(i) Federal	$M	832.1	637.9	763.9	530.3	375.6	240.9	207.4	82.6
(ii) Provincial and local	$M	230.2	200.1	207.8	244.8	234.2	267.2	253.8	215.5
21. Distribution of average net fiscal amount—all governments[i]	$	1592.6	1904.7	1940.4	1676.7	1348.6	1028.6	983.3	583.5
(i) Federal	$	1247.5	1449.9	1525.5	1147.2	830.7	487.7	442.2	161.7
(ii) Provincial and local	$	345.1	454.8	415.0	529.5	517.9	541.0	541.1	421.9
22. Effective net fiscal incidence using B.I.—all governments[j]	%	205.9	98.3	72.2	42.3	25.0	15.7	12.7	6.6
(i) Federal	%	161.3	74.8	56.8	28.9	15.4	7.5	5.7	1.8
(ii) Provincial and local	%	44.6	23.5	15.5	13.3	9.6	8.3	7.0	4.8
23. Effective net fiscal incidence using A.B.I.—all governments[k]	%	67.3	49.6	41.9	29.7	20.0	13.6	11.3	6.2
(i) Federal	%	52.7	37.7	33.0	20.3	12.3	6.4	5.1	1.7
(ii) Provincial and local	%	14.6	11.8	9.0	9.4	7.7	7.1	6.6	4.5

Table 7—continued

SUMMARY OF SELECTED INDICATORS OF INCOME, TAXES AND INCIDENCE, 1970

Family Money Income Class		$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
1. Family money income[a]	$M	4403.2	4145.4	4139.8	3430.1	3225.5	2665.6	18206.9	59902.1
2. Broad income[b]	$M	4542.8	4261.4	4343.1	3626.1	3357.1	2857.1	19852.3	61191.9
3. Adjusted broad income[c]	$M	4727.6	4351.5	4293.9	3472.5	3243.6	2722.3	16936.5	63624.1
4. Total tax payments	$M	1814.8	1662.0	1699.0	1437.6	1274.3	1093.0	8765.4	25830.6
(i) Federal	$M	921.0	852.2	884.2	735.2	660.7	563.3	4381.7	12863.4
(ii) Provincial and local	$M	893.8	809.8	814.8	702.4	613.6	529.7	4383.7	12967.2
5. Total government expenditures	$M	1999.6	1752.1	1649.8	1284.0	1160.9	958.2	5849.7	28262.9
(i) Federal	$M	966.7	831.1	779.0	629.9	575.3	486.8	3057.2	14861.7
(ii) Provincial and local	$M	1033.0	921.0	870.8	654.0	585.6	471.4	2792.5	13401.2
6. Number of families and unattached individuals	000	462.2	391.3	360.2	273.7	237.9	187.9	854.9	6764.1
7. Average family money income	$	9525.6	10594.2	11492.9	12532.3	13559.2	14188.1	21297.5	8855.9
8. Average broad income	$	9827.7	10890.7	12057.5	13248.6	14112.5	15207.6	23222.1	9046.6
9. Average adjusted broad income	$	10227.5	11121.0	11920.9	12687.3	13635.5	14490.3	19811.4	9406.2
10. Average taxes—all governments	$	3926.1	4247.5	4716.8	5252.5	5357.1	5817.6	10253.3	3818.8
11. Average federal taxes	$	1992.4	2177.8	2454.8	2686.2	2777.5	2998.1	5125.5	1901.7
12. Average provincial and local taxes	$	1933.7	2069.6	2262.0	2566.3	2579.6	2819.5	5127.8	1917.1
13. Average government expenditures—all governments	$	4325.9	4477.8	4580.3	4691.2	4880.1	5100.3	6842.6	4178.4
14. Average federal expenditures	$	2091.2	2124.1	2162.7	2301.6	2418.3	2591.0	3576.1	2197.2
15. Average provincial and local expenditure	$	2234.7	2353.7	2417.5	2389.6	2461.8	2509.2	3266.5	1981.2
16. Effective tax rate using B.I.—all governments[d]	%	39.9	39.0	39.1	39.6	38.0	38.3	44.2	42.2
(i) Federal	%	20.3	20.0	20.4	20.3	19.7	19.7	22.1	21.0
(ii) Provincial and local	%	19.7	19.0	18.8	19.4	18.3	18.5	22.1	21.2
17. Effective tax rate using A.B.I.—all governments[e]	%	38.4	38.2	39.6	41.4	39.3	40.1	51.8	40.6
(i) Federal	%	19.5	19.6	20.6	21.2	20.4	20.7	25.9	20.2
(ii) Provincial and local	%	18.9	18.6	19.0	20.2	18.9	19.5	25.9	20.4
18. Expenditure incidence using B.I.—all governments[f]	%	44.0	41.1	38.0	35.4	34.6	33.5	29.5	46.2
(i) Federal	%	21.3	19.5	17.9	17.4	17.1	17.0	15.4	24.3
(ii) Provincial and local	%	22.7	21.6	20.0	18.0	17.4	16.5	14.1	21.9
19. Expenditure incidence using A.B.I.—all governments[g]	%	42.3	40.3	38.4	37.0	35.8	35.2	34.5	44.4
(i) Federal	%	20.4	19.1	18.1	18.1	17.7	17.9	18.1	23.4
(ii) Provincial and local	%	21.8	21.2	20.3	18.8	18.1	17.3	16.5	21.1
20. Distribution of net fiscal amount—all governments[h]	$M	184.8	90.1	−49.2	−153.6	−113.5	−134.8	−2915.7	2432.3
(i) Federal	$M	45.7	−21.0	−105.2	−105.3	−85.4	−76.5	−1324.5	1998.3
(ii) Provincial and local	$M	139.2	111.2	56.0	−48.4	−28.0	−58.3	−1591.2	434.0

21. Distribution of average net fiscal amount—all governments[i]	$	399.8	230.4	−136.6	−561.3	−477.0	−717.3	−3410.7	359.6
(i) Federal	$	98.8	−53.7	−292.0	−384.6	−359.2	−407.1	−1549.4	295.4
(ii) Provincial and local	$	301.0	284.1	155.5	−176.7	−117.8	−310.3	−1861.3	64.2
22. Effective net fiscal incidence using B.I.—all governments[j]	%	4.1	2.1	−1.1	−4.2	−3.4	−4.7	−14.7	4.0
(i) Federal	%	1.0	−0.5	−2.4	−2.9	−2.5	−2.7	−6.7	3.3
(ii) Provincial and local	%	3.1	2.6	1.3	−1.3	−0.8	−2.0	−8.0	0.7
23. Effective net fiscal incidence using A.B.1.—all governments[k]	%	3.9	2.1	−1.1	−4.4	−3.5	−5.0	−17.2	3.8
(i) Federal	%	1.0	−0.5	−2.4	−3.0	−2.6	−2.8	−7.8	3.1
(ii) Provincial and local	%	2.9	2.6	1.3	−1.4	−0.9	−2.1	−9.4	0.7

Source: Table 4.

[a]Sum of money wages and investment income, transfer payments and private pension receipts.
[b]Sum of cash and non-cash income before deduction of taxes and excluding government bond interest receipts and transfer receipts.
[c]Sum of cash and non-cash income including benefits of government expenditure programs but after deduction of taxes.
[d]Line 4 – line 2 above.
[e]Line 4 – line 3 above.
[f]Line 5 – line 2 above.
[g]Line 5 – line 4 above.
[h]Line 5 – line 4 above.
[i]Line 20 – line 6 above.
[j]Line 20 – line 2 above.
[k]Line 20 – line 3 above.

TABLE 8

FEDERAL GOVERNMENT EXPENDITURE BY INCOME CLASS, 1970
Millions of dollars

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
Highways: cars	0.3	0.4	1.2	1.8	1.8	2.9	4.0	4.8
trucks	1.6	1.3	2.2	2.5	2.8	3.5	3.7	4.5
Other transportation: persons	9.5	6.0	14.0	13.2	15.3	15.6	16.4	20.1
business	7.9	6.5	11.2	12.6	14.0	17.5	18.5	22.5
Adult occupational training	43.5	45.3	69.7	47.5	44.7	16.4	11.7	4.5
Indian and Eskimo education	64.1	17.9	16.0	3.2	2.4	0.8	0.5	0.1
Post-secondary education	45.8	40.5	48.3	70.3	82.6	79.2	81.7	69.3
Bilingualism	7.6	5.0	5.7	5.3	5.2	5.6	5.3	5.8
Local schools	0.4	0.5	0.8	0.9	1.0	1.4	1.4	1.7
Health	7.5	4.9	5.6	5.2	5.1	5.6	5.3	5.7
Medical care	48.0	31.6	36.0	33.2	32.5	35.5	33.7	36.7
Hospital	120.1	79.2	90.2	83.2	81.4	89.0	84.5	92.0
Sanitation: persons	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
business	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family/youth allowances	15.8	16.9	29.8	35.7	37.7	50.6	53.5	61.4
U.I.C. benefits	50.1	55.4	68.3	62.3	55.4	57.0	56.2	57.0
Social assistance, other	50.3	79.6	108.5	105.0	72.6	61.4	62.4	45.2
Veterans pensions	26.3	41.6	56.7	54.9	37.9	32.1	32.6	23.6
Pensions	2.4	1.5	9.6	14.7	22.6	28.0	29.1	27.8
OAS/GIS	321.9	242.6	332.6	193.8	144.7	109.7	94.0	73.4
Indian and Eskimo	99.5	27.7	24.9	5.0	0.0	0.0	0.0	0.0
CSB interest	5.8	10.1	19.7	16.6	14.7	17.5	23.1	22.1
Marketable securities	4.2	7.3	14.2	11.9	10.5	12.6	16.6	15.8
General expenditures[1]	44.4	73.4	115.8	158.0	209.7	278.5	311.5	389.1
Total	977.3	795.6	1081.4	937.0	894.9	920.4	945.9	983.4

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000– and over	Total
Highways: cars	4.2	5.3	6.4	4.0	3.5	2.7	25.5	69.0
trucks	4.3	4.0	4.0	3.1	2.7	2.2	12.6	55.0
Other transportation: persons	20.1	16.4	19.1	15.2	13.1	10.2	72.9	277.0
business	21.4	20.3	20.4	15.8	13.8	11.0	63.6	277.0
Adult occupational training	2.7	1.4	0.8	1.7	0.0	0.0	0.0	290.0
Indian and Eskimo education	0.0	0.0	0.0	0.0	0.0	0.0	0.0	105.0
Post-secondary education	67.2	35.5	38.8	20.7	27.6	29.8	125.6	863.0
Bilingualism	5.3	4.5	4.1	3.1	2.7	2.1	9.7	77.1
Local schools	1.6	1.4	1.2	0.9	0.7	0.6	2.5	17.0
Health	5.2	4.4	4.1	3.1	2.7	2.1	9.6	76.1
Medical care	33.2	28.1	25.9	19.7	17.1	13.5	61.5	486.4
Hospital	83.2	70.5	64.9	49.3	42.8	33.8	154.0	1218.1
Sanitation: persons	0.2	0.2	0.2	0.1	0.1	0.1	0.4	3.0
business	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family/youth allowances	59.4	53.5	46.6	33.7	28.7	21.8	99.0	644.1
U.I.C. benefits	54.7	49.3	43.3	32.6	27.3	22.8	96.5	788.1
Social assistance, other	44.6	41.1	18.3	12.1	24.9	4.6	63.4	794.1
Veterans pensions	23.3	21.5	9.5	6.3	13.0	2.4	33.2	415.0
Pensions	28.0	24.9	23.5	17.2	15.2	12.2	41.3	298.0
OAS/GIS	69.4	52.8	40.0	42.1	23.5	37.2	129.1	1906.8
Indians and Eskimo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	157.0
CSB interest	27.5	16.9	19.7	21.4	15.6	18.4	202.0	451.0
Marketable securities	19.8	12.1	14.2	15.4	11.2	13.2	145.2	324.0
General expenditures[1]	391.2	367.0	374.0	312.3	289.1	246.1	1709.7	5270.0
Total	966.7	831.1	779.0	629.9	575.3	486.8	3057.2	14861.7

Note: [1]Distributed on basis of broad income.

exceeding $15,000 faced net costs of federal government equal to about 7 percent of broad income.

The average federal tax rates appear regressive in the lowest three income categories because these rates have been computed on the basis of broad income. The reason for this is clear. Since family money income greatly exceeds broad income for these income categories and virtually all of this money income is spent on consumption goods, consumption taxes appear to represent a very large fraction of broad income. In order to avoid a misleading impression of the progressivity of the federal tax-transfer system as a whole, it is thus very important to use total fiscal incidence calculations rather than simply using tax incidence figures only.[14]

In row 21(i) of Table 7 the net dollar benefits per family from federal expenditure and tax programs are shown. This shows that "net" benefits or the difference between federal expenditure benefits and taxes amounted to approximately $1,500 per family for those having family money incomes below $5,000. Above this income level net benefits declined until about the $10,000 income level at which point tax payments become approximately equal to government expenditure benefits, including benefits from "general" expenditure. In the $15,000 and over income category tax payments exceed expenditure benefits by approximately $1,550.

For analytical purposes, families may be grouped by approximate quintiles each containing approximately 20 percent of the total number of families. Thus, in comparing the top and bottom quintiles, incomes of the 22.9 percent of families with money incomes over 12,000 are compared to those of the 23.8 percent of families with money incomes of less than $4,000. The bottom quintile, which accounted for only 4.4 percent of the total broad income, paid 4.8 percent of the federal taxes and received 19.3 percent of the estimated benefits of

TABLE 9

BROAD INCOME AND ADJUSTED BROAD INCOME BY QUINTILE, 1970

Quintile	Money Income Range	Percent of Families	Percent of Broad Income	Percent of Broad Income Adjusted for Federal Programs	Percent of Broad Income Adjusted for Provincial and Local Programs	Percent of Adjusted Broad Income
Top	$12000 and over	22.9	48.6	44.5	45.4	41.5
4th	9000–11999	17.9	21.5	20.7	21.8	20.9
3rd	7000– 8999	14.5	13.3	13.3	14.0	14.0
2nd	4000– 6999	20.8	12.3	13.7	13.4	14.8
Bottom	less than 4000	23.8	4.4	7.8	5.4	8.8

Source: Table 4.

[14]On this point it is important to note that Maslove's study of the *Pattern of Taxation in Canada* is somewhat misleading because taxes are calculated as a fraction of broad income rather than "basic income" (*i.e.* total cash plus non-cash income from all sources).

federal expenditure programs. On the other hand, the top quintile, which accounted for 48.6 percent of the total broad income, paid 48.0 percent of the federal taxes and received 32.0 percent of federal expenditure benefits.

The redistributive effect of federal tax and expenditure actions on income can be observed from Table 9 by comparing the distributions of broad income and of broad income adjusted for federal taxes and expenditures. From this table it can be seen that while the bottom quintile received only 4.4 percent of total broad income, it received 7.8 percent of broad income adjusted for federal taxes and expenditures. The top quintile which received 48.6 percent of broad income received only 44.5 percent of broad income adjusted for federal taxes and expenditures.

(c) *The Incidence of Provincial and Local Taxes and Expenditures*

As can be observed from Table 5, the incidence of provincial and local taxes is much more regressive than that of federal taxes. The lowest quintile bears 7.5 percent of provincial and local taxes compared to 4.8 percent of federal taxes while the highest quintile bears 48.0 percent of provincial and local taxes compared to 49.3 percent of federal taxes. The reason for this is of course that property and consumption taxes account for a far greater percentage of provincial and local revenue than they do of federal revenue.

From Table 5 it will also be observed that provincial and local expenditures are far less redistributive than federal expenditures. While the bottom quintile receives 19.3 percent of federal expenditures it receives only 12.3 percent of provincial and local expenditures. At the same time the top quintile receives 34.0 percent of provincial and local expenditure but only 32.0 percent of federal expenditure. The main reason for these large differences is that the federal government pays large demogrants to the aged (old age security and guaranteed income supplements) and to families (family and youth allowances) as well as 50 percent of all assistance (welfare) payments to individuals and families. As these cash payments are more redistributive than expenditures on goods and services, the total incidence of federal expenditures is more redistributive than that of provincial and local expenditures.

The total incidence of taxes and expenditures of all levels of government is seen in Tables 5 and 9. The lowest quintile, which receives 4.4 percent of broad income, gets 8.8 percent of adjusted broad income. In other words, the combined effect of taxes and expenditures of all levels of government appears to double the share of income received by the lowest quintile. At the same time the share of the top quintile is reduced from about 48.6 percent of broad income to 41.5 percent of adjusted broad income.[15] While it is certainly possible that relative factor prices are sufficiently altered by government policy so as to more than offset the redistributive impact incidence described here, these estimates provide *prima facie* evidence that the distributive branch of government in Canada was effecting some redistribution of income from the rich to the poor. The estimates of impact

[15]Note, however, that the effect of the budgetary deficit of all levels of government has not been distributed across income groups. Because of this, these estimates may slightly overstate the amount of static redistribution which takes place.

incidence under different assumptions presented in the next section do not substantially alter this basic conclusion.

(d) *The Total Incidence of Taxes and Expenditures: A Comparison of the Estimates*

Comparative estimates of effective net fiscal incidence of federal, provincial and local, and all governments under the various assumptions about shifting of taxes and the distribution of the benefits of general expenditures are made in this section. The alternative sets of assumptions are listed below:

Estimate A is the primary estimate from Table 5 assuming that 25 percent of corporation income tax is shifted to consumers, 100 percent of employers' social security contributions are shifted to employees and expenditures on pure public goods are distributed on the basis of broad income.

Estimate B assumes 75 percent forward shifting of the corporation income tax with other assumptions the same as in Estimate A.

Estimate C assumes 50 percent of employers' social security contributions are shifted to employees and 50 percent are passed on to consumers in the form of higher prices. The other assumptions are the same as in Estimate A.

Estimate D assumes that the benefits from expenditures on pure public goods are distributed inversely as the marginal utility of family disposable income. The income elasticity of the marginal utility of public goods is taken to be 1.55. Other assumptions are the same as those of Estimate A.

Estimate E: Assumptions are the same as for Estimate D except that the income elasticity of marginal utility of public goods is assumed to be 2.0.

Estimate F assumes that no benefits flow directly to family units from expenditures on pure public goods, *i.e.*, that the benefits of these expenditures are already reflected in the distribution of broad income adjusted for government expenditure on other goods and services of essentially a "private good" nature. Other assumptions remain the same as those of Estimate A.

From Tables 10 and 11 it is evident that assumption sets A through D yield very similar estimates of net fiscal incidence. Estimates based on assumption set E, i.e., that expenditures on pure public goods are distributed on the basis of the inverse of the marginal utility of personal disposable income which has an elasticity of 2.0, yield a net fiscal incidence which is somewhat *less* redistributive than the Estimates A through D. However, under this assumption the lowest quintile still receives 8.5 percent of adjusted broad income compared to 4.4 percent of broad income. The highest quintile receives 44.1 percent of adjusted broad income compared to 48.5 percent of broad income. The middle three quintiles receive 47.4 percent of adjusted broad income compared to 47.1 percent of adjusted broad income. Thus, contrary to the conclusion of Maital that no effective redistribution takes place under this assumption,[16] there is significant redistribution from the top to the bottom quintile although the amount of this redistribution is less than under alternative assumptions.

[16]Shlomo Maital, *op. cit.*

When general government expenditures are assumed to produce no direct benefits to families and individuals and are regarded solely as social overhead costs, *Estimate F*, the estimated net fiscal impact is more redistributive than Estimates A through D. The top quintile receives only 39.0 percent of adjusted broad income (compared to 41.5 percent under assumption A) and the bottom quintile receives 10.1 percent of adjusted broad income (compared to 8.8 percent under assumption A).

In sum, the conclusion that the net impact of government taxes and expenditures is broadly redistributive holds under all alternative assumptions explored in this paper. The estimate of the amount of redistribution appears to be relatively insensitive to the precise assumptions made about shifting of corporation income taxes and employer social security contributions (payroll taxes). Estimates are more sensitive to the assumption made about the distribution of benefits from expenditures on pure public goods. Nevertheless, in all cases the pattern of incidence is broadly redistributive.

V. Simulation of Incidence of Government Programs for 1970 Assuming that 1972 Revised Federal Tax-Transfer Programs were Operative

(a) *General Considerations*

The purpose of this section is to simulate what the direct fiscal incidence of government programs in 1970 would have been if the 1971 revisions to the Income Tax Act, the 1972 revisions to old age security and income supplement rates, the 1971 Unemployment Insurance Act and the 1973 revisions to the Family Allowance Act were all operative in 1970.[17] For this simulation, as in the rest of the study, only first order incidence has been estimated, i.e., it has been assumed that relative factor prices are not affected by the new legislation. The assumption seems reasonable for capital. However, the relative wages of labour supplied by different types of workers may be affected. For example, the supply price of labour in seasonal and cyclical employments may fall because of the more liberal unemployment insurance provisions. In addition, these changes in unemployment insurance legislation, and to a lesser extent changes in tax legislation, are likely to encourage increased participation of secondary workers.[18] As these workers are likely to be drawn largely from the lower middle income groups, and as unemployment insurance benefits paid to these workers are likely to be underestimated, the simulated fiscal incidence for 1970 probably underestimates the transfer payments made to family units with money incomes in the range of $4,000 to $8,000.

In making the simulations it has further been assumed that payments to households under other transfer programs, such as the Canada Assistance Act, are in no way affected by changes in tax, unemployment insurance, OAS/GIS and family allowance legislation. This assumption probably leads to an overestimate of total money transfers from governments to family units with incomes of less

[17]See appendix for a summary description of these legislative changes.

[18]The group most strongly affected is likely to be married female workers.

TABLE 10

COMPARATIVE ESTIMATES OF NET FISCAL INCIDENCE UNDER ALTERNATIVE ASSUMPTIONS

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
A. Net fiscal incidence:[1]								
all levels	205.9	98.3	72.2	42.3	25.0	15.7	12.7	6.6
federal only	161.3	74.8	56.8	28.9	15.4	7.5	5.7	1.8
provincial and local only	44.6	23.5	15.5	13.3	9.6	8.3	7.0	4.8
B. Net fiscal incidence:								
all levels	206.1	99.9	73.9	42.1	24.3	14.9	12.2	5.8
federal only	161.9	76.1	58.2	28.8	14.9	6.9	5.3	1.2
provincial and local only	44.2	23.8	15.7	13.3	9.4	8.1	6.9	4.5
C. Net fiscal incidence:								
all levels	200.6	92.0	68.1	39.7	23.9	15.0	12.2	6.1
federal only	155.3	68.5	52.6	26.4	14.3	6.8	5.2	1.4
provincial and local only	45.3	23.5	15.5	13.3	9.5	8.2	7.0	4.8
D. Net fiscal incidence:								
all levels	197.0	97.5	68.1	38.5	21.7	12.8	10.6	5.3
federal only	155.7	74.3	54.2	26.6	13.3	5.7	4.4	1.0
provincial and local only	41.3	23.2	13.9	11.9	8.4	7.2	6.2	4.3
E. Net fiscal incidence:								
all levels	192.1	84.5	58.4	28.5	11.2	1.9	−1.1	−7.2
federal only	152.7	66.2	48.2	20.3	6.8	−1.1	−2.9	−6.8
provincial and local only	39.0	18.3	10.2	8.2	4.4	3.0	1.8	−0.4

Table 10—continued

COMPARATIVE ESTIMATES OF NET FISCAL INCIDENCE UNDER ALTERNATIVE ASSUMPTIONS

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
A. Net fiscal incidence:[1]								
all levels	4.1	2.1	−1.1	−4.2	−3.4	−4.7	−14.7	4.0
federal only	1.0	−0.5	−2.4	−2.9	−2.5	−2.7	−6.7	3.3
provincial and local only	3.1	2.6	1.3	−1.3	−0.8	−2.0	−8.0	0.7
B. Net fiscal incidence:								
all levels	3.5	1.2	−2.0	−4.8	−4.0	−5.0	−14.3	3.7
federal only	0.6	−1.2	−3.0	−3.3	−3.0	−2.8	−6.4	3.1
provincial and local only	2.9	2.3	1.0	−1.5	−1.0	−2.1	−8.0	0.6
C. Net fiscal incidence:								
all levels	3.7	1.8	−1.3	−4.4	−3.5	−4.8	−14.8	3.3
federal only	0.6	−0.9	−2.7	−3.2	−2.8	−5.0	−7.1	2.5
provincial and local only	3.1	2.6	1.4	−1.2	−0.7	−1.9	−7.7	0.8
D. Net fiscal incidence:								
all levels	3.1	2.3	−0.9	−3.7	−1.0	−3.0	−12.9	4.0
federal only	0.4	−0.4	−2.3	−2.6	−1.0	−1.6	−5.5	3.3
provincial and local only	2.7	2.7	1.4	−1.1	0.1	−1.4	−7.3	0.7
E. Net fiscal incidence:								
all levels	−22.4	−22.6	−24.3	−29.5	−25.7	−27.0	−35.5	−15.8
federal only	−20.3	−20.0	−20.3	−22.4	−19.6	−19.7	−22.1	−11.3
provincial and local only	−2.1	−2.6	−4.0	−7.1	−6.1	−7.3	−13.4	−4.5

Note: [1]See text for description of alternative assumptions.

TABLE 11

CUMULATIVE DISTRIBUTIONS OF BROAD INCOME AND ADJUSTED BROAD INCOMES UNDER ALTERNATIVE ASSUMPTIONS

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
Broad income (ass. A)[1]	0.8	2.2	4.4	7.4	11.4	16.7	22.6	30.0
Adjusted broad income (ass. A)	2.5	5.2	8.8	12.9	17.7	23.6	30.0	37.6
Adjusted broad income (ass. B)	2.5	5.2	8.8	12.9	17.6	23.5	29.9	37.5
Adjusted broad income (ass. C)	2.4	5.0	8.5	12.5	17.3	23.2	29.6	37.2
Adjusted broad income (ass. D)	2.4	5.0	8.6	12.6	17.3	23.0	29.3	36.8
Adjusted broad income (ass. E)	2.4	4.0	8.5	12.4	17.0	22.7	29.1	36.6
Adjusted broad income (ass. F)	2.9	6.0	10.1	14.7	19.9	26.3	33.3	41.4
Family units	9.9	16.4	23.8	30.6	38.3	44.6	51.5	59.1

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over
Broad income (ass. A)[1]	37.4	44.4	51.5	59.4	62.9	67.6	100.0
Adjusted broad income (ass. A)	45.0	51.8	58.5	64.0	69.1	73.4	100.0
Adjusted broad income (ass. B)	44.9	51.7	58.4	63.9	69.0	73.3	100.0
Adjusted broad income (ass. C)	44.7	51.6	58.4	63.9	69.0	73.3	100.0
Adjusted broad income (ass. D)	44.2	51.1	57.9	63.4	68.6	73.0	100.0
Adjusted broad income (ass. E)	43.3	49.6	55.9	61.3	66.4	70.7	100.0
Adjusted broad income (ass. F)	48.2	54.6	61.0	66.2	71.0	75.0	100.0
Family units	65.9	71.7	77.0	81.0	84.5	87.3	100.0

Note: [1]See text for descriptions of these assumptions.

than $4,000 per year. The reason for this is that additional unemployment insurance and family allowance payments under the new acts would partially substitute for Canada Assistance (welfare) payments rather than be totally added to these payments as has been assumed here. Because of this bias, and the bias arising from the failure to account for higher order effects of the changes in legislation, the simulated 1970 distribution of adjusted broad income is likely to be biased slightly more towards the low income groups than was the estimate of the actual 1970 distribution.

(b) *Specific Assumptions*

(i) Personal Income Tax:

The provisions of the Income Tax Act, 1971, with respect to rates, exemptions, and deductions for federal income tax in 1972 have been applied to 1970 incomes. Details of these provisions are summarized in the appendix. However, no account has been taken of provisions to tax capital gains, or of provisions which affect the proportion of asset income which is taxable, as the distributive impact of these changes could not be simulated in this study because of data deficiencies. Failure to account for these provisions probably causes the simulated adjusted broad income of the upper income group ($15,000+) to be biased upward. In addition, the effects of changes in provincial income taxes have not been estimated.

(ii) Unemployment Insurance:[19]

Unemployment insurance contributions paid by an individual are calculated at the rate of 0.9 percent of earnings from employment of $25 per week or more to a maximum of $150. If the minimum provincial wage was less than $30 per week, the covered wage was calculated to be 20 times the provincial hourly minimum wage. The maximum contribution to the scheme by an individual taxpayer under 70 years of age is $70.

As no data are available on the precise number of weeks of eligibility for unemployment insurance under the new act, regular benefits at a rate equal to two-thirds of weekly earnings to a maximum of $100 per week are assumed to be payable to all labour force participants for weeks not worked in 1970 providing that:

—males 22 to 64 years of age worked at least eight and not more than 50 weeks,[20]

—females with no children and males under 22 years of age worked at least 16 and not more than 50 weeks; (this provision is intended to exclude those who normally attend school or university on a full-time basis),

—males and females between 65 and 70 years of age, inclusive, worked at least 16 but not more than 50 weeks; (this provision is intended to exclude those who retired during the year), and

—considerably more stringent eligibility requirements are applied to married females with children present.

[19]Detailed methods of calculation are set out in appendix G, available from the author on request.

[20]Note that weeks on paid vacation or sick leave are considered to be weeks worked.

Maternity benefits are calculated at the rate of $\frac{2}{3}$ of weekly earnings for 15 weeks per pregnancy for married participants who worked at least 15 weeks in 1970. Estimated in this way, simulated benefit payments are likely to be biased upward because participants may not be eligible for the full 15 weeks and because pregnancy rates are likely to be overestimated.[21]

Sickness benefit is calculated on the basis of hospital morbidity in 1970; biases in this calculation are off-setting. The upward bias due to the assumption that all participants hospitalized are eligible for this benefit is compensated for by the downward bias arising from the assumption that only those hospitalized are eligible, and that they are eligible only for the days of hospitalization. Which of these biases is the greater is not known, however.

Retirement benefit of 10 days to those 65 to 70 years of age inclusive is calculated on the assumption that $\frac{2}{3}$ of those in this age group will be retiring from the labour force. Those who worked 17 weeks during 1970 are assumed eligible for this benefit.

(iii) Old Age Security/Guaranteed Income Supplement:

The December 1972 OAS/GIS maximum payment of $1,800 is allowed every person 65 years and over. This transfer is reduced by one dollar for every two dollars of his income for tax purposes until the minimum OAS payment of $1,000 is reached. Because the data did not distinguish between married couples over 65 and single persons over 65 living together, all persons over 65 were treated as single and entitled to the single GIS rate. For this reason simulated GIS transfers are biased upward, the bias being greatest in the under $2,000 income category and disappearing in the $4,000 and over income categories.

(iv) Family Allowances:

Family allowance payments are calculated for all families with children under 18 on the assumption that a non-taxable payment of $20 per month is made in respect of each child and the $300 tax exemption for each child is eliminated.[22]

(c) *Results of the Simulation*

The simulations of the revised unemployment insurance, OAS/GIS, and family allowance payments to, and personal income taxes paid by, income groups are calculated on the basis of the demographic and income characteristics of persons in the group according to the methods described above. The simulated distribution of the components of adjusted broad income across income classes is reported in Table 12. The horizontal and vertical percentage distributions of these components are given in Tables 13 and 14 respectively. These tables are analogues to Tables 4 to 6, and may be compared directly with these tables in order to arrive at an estimate of the net effect of the changes in federal tax and

[21]Although females must have a major attachment (20 weeks worked in the last 52) to claim benefit, some of these weeks may have been worked in the previous calendar year.

[22]These estimates were made before the new family allowance legislation reached the House. The actual legislation which will go into effect in 1974 provides for a taxable allowance of $240 per year and the retention of the $300 exemption.

transfer policy on the distribution of adjusted broad income. This comparison is made in Table 15.

From Table 15 it is evident that the revisions in the federal tax and transfer system have increased the amount of redistribution. The fraction of taxes borne by the lowest income groups has been considerably reduced by tax reform; the lowest quintile now bears 4.5 percent of federal taxes compared to 4.8 per cent before tax reform. The upper quintile bears 51 percent of federal taxes compared to 49.3 percent prior to tax reform.[23] The fraction of expenditures accruing to the lowest quintile has been slightly *reduced* by the changes in the federal transfer system from 19.3 per cent to 19.0 percent but the fraction accruing to the second quintile has been *increased* from 24.9 percent to 25.2 percent and the fraction accruing to the top quintile reduced from 27.7 percent to 26.9 percent of total federal expenditures.

The net impact of tax plus expenditure changes has been to increase the fraction of adjusted broad income received by the lowest quintile from 8.8 percent to 9.1 percent of the total and to reduce the fraction accruing to the top quintile from 42.5 percent to 42.2 percent. In terms of net fiscal incidence, families with broad incomes under two thousand dollars under the new federal tax-transfer system would have received a net transfer equal to 234 percent of their broad income in 1970 compared to the net transfer of 206 percent they actually received.[24] The highest income group would have paid 14.7 percent of their broad income in net taxes if the new system had been in effect in 1970 compared to the 12.5 percent net this group actually paid. While these changes in distribution appear small at first glance, rough calculations indicate that these changes in the net impact incidence of federal government programs was at least as great as the cumulative effect of the changes during the whole decade 1961 to 1970. However, the extent to which this impact effect has been offset by changes in the distribution in broad income induced by these changes in tax and transfer policy is unknown.

Appendix
Summary Description of Changes in Canadian Tax and Transfer Legislation

1. *Personal Income Tax*

The following are the major changes in the personal income tax introduced in the 1971 Income Tax Act. The effects of further revisions to the exemptions and rate schedules for 1973 have not been incorporated in this study. It should be noted that provincial personal income taxes in all provinces except Quebec are expressed as a fraction of the federal tax:

—personal exemptions are raised to $1,500 from $1,000 for single persons, and to $2,850 from $2,000 for married persons.

—child care expenses become deductible up to $500 per child under 14, with a maximum of $2,000 per family. (No deduction previously permitted.)

[23]The simulated fraction of taxes borne by the upper quintile is likely to be an underestimate because of the omission of the new capital gains tax.

[24]Note that this is not adjusted for the larger federal deficit simulated for the new tax-transfer system.

TABLE 12

AGGREGATE FAMILY MONEY INCOME, BROAD INCOME, ADJUSTED BROAD INCOME AND NUMBER OF FAMILIES, SIMULATIONS
Millions of dollars

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
1–7. Earned and asset income	320.4	663.7	1076.6	1570.8	2141.9	2896.3	3221.1	4107.3
8. Family and youth allowances	42.2	49.4	85.2	100.6	107.3	145.4	154.3	177.6
9. OAS/GIS[a]	465.0	309.0	438.0	238.0	177.0	134.0	116.0	87.0
10. Unemployment insurance benefit[a]	40.0	90.0	85.0	109.0	117.0	134.0	123.0	142.0
11. Other transfers	130.1	206.2	281.1	272.0	187.9	158.9	161.6	117.0
12. Family money income	997.7	1318.3	1965.9	2290.4	2731.1	3468.6	3776.0	4630.9
13–16. Imputed, asset income contributions[a]	141.2	132.3	163.9	187.5	237.6	299.1	335.9	370.7
17. Shifted social security	−3.6	−8.3	−13.2	−23,8	−36.2	−49.3	−54.7	−72.5
18–23. Imputed, other	174.1	168.0	253.7	253.4	252.8	251.4	289.5	271.8
24. Non-cash income total	311.7	292.0	404.4	417.1	454.2	501.2	570.7	570.0
25. Government bond interest	−9.6	−16.8	−32.7	−27.5	−24.3	−29.0	−38.2	−36.6
26. Transfers	−783.9	−741.4	−992.5	−845.7	−725.9	−707.0	−690.7	−646.1
27. *Broad income*	515.9	852.1	1345.1	1834.3	2435.1	3233.8	3617.7	4518.2
28. Federal government taxes[b]	136.2	137.0	284.5	371.7	477.3	631.5	685.6	842.8
29. Provincial and local government taxes[b]	289.4	264.1	447.0	475.7	518.8	648.1	711.6	864.7
30. Federal government expenditure	1133.1	928.9	1257.2	1094.2	1060.5	1120.0	1139.2	1202.8
31. Provincial and local government expenditures	519.6	464.2	654.8	720.5	753.0	915.4	965.4	1080.3
32. *Adjusted broad income*	1725.0	1820.4	2461.6	2731.6	3168.5	3893.6	4219.1	4977.8

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
1–7. Earned and asset income	4114.6	3892.5	3970.7	3296.4	3086.5	2576.4	17736.6	54672.0
8. Family and youth allowances	168.0	152.1	132.3	96.7	78.5	60.2	242.1	1810.3
9. OAS/GIS[a]	87.0	65.0	50.0	52.0	28.0	45.0	155.0	2446.0
10. Unemployment insurance benefit[a]	135.0	120.0	103.0	84.0	73.0	68.0	310.0	1733.0
11. Other transfers	115.5	106.5	47.3	31.5	64.4	11.9	164.3	2056.2
12. Family money income	4620.1	4336.1	4303.3	3560.6	3330.4	2761.5	18608.0	62717.5
13–16. Imputed, asset income contributions[a]	363.1	357.1	342.6	283.3	249.9	232.3	1379.7	5076.0
17. Shifted social security	−73.4	−70.6	−68.6	−59.7	−57.0	−45.8	−271.4	−908.0
18–23. Imputed, other	300.6	184.2	204.5	186.7	155.4	173.6	1557.7	4677.4
24. Non-cash income total	590.3	470.7	478.5	410.3	348.3	360.1	2666.0	8845.4
25. Government bond interest	−45.6	−28.0	−32.7	−35.5	−25.8	−30.5	−335.1	−748.0
26. Transfers	−622.2	−517.3	−405.8	−309.2	−295.8	−234.0	−1086.5	−9622.9
27. *Broad income*	4542.6	4261.5	4343.3	3626.2	3357.1	2857.1	19852.4	61192.0
28. Federal government taxes[b]	871.0	811.2	852.2	714.2	643.7	551.3	4426.7	12439.4
29. Provincial and local government taxes[b]	893.8	809.8	814.8	702.4	613.6	529.7	4383.7	12967.2
30. Federal government expenditure	1177.8	1017.2	938.5	757.5	678.7	580.8	3452.0	17548.4
31. Provincial and local government expenditures	1033.0	921.0	870.8	654.0	585.6	471.4	2792.5	13401.2
32. *Adjusted broad income*	4888.6	4494.7	4421.6	3579.1	3330.1	2804.3	17376.5	65886.9

Notes: [a]Simulations from 1969 Consumer Finance Survey micro-data are based on same assumptions as Table 4.
[b]Change in federal personal income tax only is simulated from Consumer Finance Data.

TABLE 13

HORIZONTAL DISTRIBUTION OF BROAD INCOME, ADJUSTED BROAD INCOME, THEIR COMPONENTS AND NUMBER OF FAMILIES, SIMULATIONS

Percent

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
1. Money income excluding transfers	0.6	1.2	2.0	2.9	3.9	5.3	5.9	7.5
2. Transfers from governments, corporations	8.4	8.1	11.1	8.9	7.3	7.1	6.9	6.5
3. Family money income	1.6	2.1	3.1	3.7	4.4	5.5	6.0	7.4
4. Imputed asset income	2.8	2.6	3.2	3.7	4.7	5.9	6.6	7.3
5. Shifted social security contributions	0.4	0.9	1.5	2.6	4.0	5.4	6.0	8.0
6. Imputed, income: other	3.7	3.6	5.4	5.4	5.4	5.4	6.2	5.8
7. Non-cash income: total	3.5	3.3	4.6	4.7	5.1	5.7	6.5	6.4
8. Government bond interest	1.3	2.2	4.4	3.7	3.2	3.9	5.1	4.9
9. Transfers from government	8.1	7.7	10.3	8.8	7.5	7.3	7.2	6.7
10. *Broad income*	0.8	1.4	2.2	3.0	4.0	5.3	5.9	7.4
11. Federal government taxes	1.1	1.1	2.3	3.0	3.8	5.0	5.5	6.8
12. Provincial and local government taxes	2.2	2.0	3.4	3.7	4.0	5.0	5.5	6.7
13. Federal government expenditures	6.5	5.3	7.2	6.2	6.0	6.4	6.5	6.9
14. Provincial and local government expenditures	3.9	3.5	4.9	5.4	5.6	6.8	7.2	8.1
15. *Adjusted broad income*	2.6	2.8	3.7	4.1	4.8	5.9	6.4	7.6

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
1. Money income excluding transfers	7.5	7.1	7.3	6.0	5.6	4.7	32.4	100.0
2. Transfers from governments, corporations	6.3	5.5	4.1	3.3	3.0	2.3	10.8	100.0
3. Family money income	7.4	6.9	6.9	5.7	5.3	4.4	29.7	100.0
4. Imputed asset income	7.2	7.0	6.7	5.6	4.9	4.6	27.2	100.0
5. Shifted social security contributions	8.1	7.8	7.6	6.6	6.3	5.0	29.9	100.0
6. Imputed, income: other	6.4	3.9	4.4	4.0	3.3	3.7	33.3	100.0
7. Non-cash income: total	6.7	5.3	5.4	4.6	3.9	4.1	30.1	100.0
8. Government bond interest	6.1	3.7	4.4	4.7	3.4	4.1	44.8	100.0
9. Transfers from government	6.5	5.4	4.2	3.2	3.1	2.4	11.3	100.0
10. *Broad income*	7.4	7.0	7.1	5.9	5.5	4.7	32.4	100.0
11. Federal government taxes	7.0	6.5	6.9	5.7	5.1	4.4	35.6	100.0
12. Provincial and local government taxes	6.9	6.2	6.3	5.4	4.7	4.1	33.8	100.0
13. Federal government expenditures	6.7	5.8	5.3	4.3	3.9	3.3	19.7	100.0
14. Provincial and local government expenditures	7.7	6.9	6.5	4.9	4.4	3.5	20.8	100.0
15. *Adjusted broad income*	7.4	6.8	6.7	5.4	5.1	4.3	26.4	100.0

Source: Table 12.
Notes: Based on same assumptions as Table 5.

TABLE 14

COMPONENTS OF INCOME EXPRESSED AS PERCENTAGE OF MEAN BROAD INCOME BY INCOME CLASS, SIMULATIONS, 1970

Percent

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
1. Money income excluding transfers	62.1	77.9	80.0	85.6	88.0	89.6	89.0	90.9
2. Transfers from governments	131.3	76.8	66.1	39.2	24.2	17.7	15.3	11.6
3. Family money income	193.4	154.7	146.2	124.9	112.2	107.3	104.4	102.5
4. Imputed asset income	27.4	15.5	12.2	10.2	9.8	9.2	9.3	8.2
5. Shifted social security contributions	−0.7	−1.0	−1.0	−1.3	−1.5	−1.5	−1.5	−1.6
6. Imputed income: other	33.7	19.7	18.9	13.8	10.4	7.8	8.0	6.0
7. Non-cash income: total	60.4	34.3	30.1	22.7	18.7	15.5	15.8	12.6
8. Government bond interest	−1.9	−2.0	−2.4	−1.5	−1.0	−0.9	−1.1	−0.8
9. Transfers from government	−151.9	−87.0	−73.8	−46.1	−29.8	−21.9	−19.1	−14.3
10. *Broad income*	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
11. Federal government taxes	26.4	16.1	21.2	20.2	19.6	19.5	19.0	18.7
12. Provincial and local government taxes	56.1	31.0	33.2	25.9	21.3	20.0	19.7	19.1
13. Federal government expenditure	219.6	109.0	93.5	59.7	43.6	34.6	31.5	26.6
14. Provincial and local expenditure	100.7	54.5	48.7	39.3	30.9	28.3	26.7	23.9
15. *Adjusted broad income*	334.3	213.6	183.0	148.9	130.1	120.4	116.6	110.2

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
1. Money income excluding transfers	90.6	91.3	91.4	90.9	91.9	90.2	89.3	89.3
2. Transfers from governments	11.1	10.4	7.7	7.3	7.3	6.5	4.4	13.1
3. Family money income	101.7	101.8	99.1	98.2	99.2	96.7	93.7	102.5
4. Imputed asset income	8.0	8.4	7.9	7.8	7.4	8.1	6.9	8.3
5. Shifted social security contributions	−1.6	−1.7	−1.6	−1.6	−1.7	−1.6	−1.4	−1.5
6. Imputed income: other	6.6	4.3	4.7	5.1	4.6	6.1	7.8	7.6
7. Non-cash income: total	13.0	11.0	11.0	11.3	10.4	12.6	13.4	14.5
8. Government bond interest	−1.0	−0.7	−0.8	−1.0	−0.8	−1.1	−1.7	−1.2
9. Transfers from government	−13.7	−12.1	−9.3	−8.5	−8.8	−8.2	−5.5	−15.7
10. *Broad income*	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
11. Federal government taxes	19.2	19.0	19.6	19.6	19.1	19.2	22.2	20.3
12. Provincial and local government taxes	19.7	19.0	18.8	19.4	18.3	18.5	22.1	21.2
13. Federal government expenditure	25.9	23.9	21.6	20.9	20.2	20.3	17.4	28.7
14. Provincial and local expenditure	22.7	21.6	20.0	18.0	17.4	16.5	14.1	21.9
15. *Adjusted broad income*	107.6	105.4	101.8	98.7	99.1	98.1	87.5	107.6

Source: Table 12.
Note: Based on some assumptions as Table 6.

TABLE 15

COMPARATIVE ESTIMATES OF COMPONENTS OF ACTUAL AND ADJUSTED BROAD INCOME

Family Money Income Class	$0–2000	$2000–3000	$3000–4000	$4000–5000	$5000–6000	$6000–7000	$7000–8000	$8000–9000
Horizontal cumulative distributions								
Federal taxes: actual	1.1	2.3	4.8	8.0	12.0	17.3	23.0	30.0
simulated	1.1	2.2	4.5	7.5	11.3	16.3	21.8	28.6
Federal expenditures: actual	6.6	12.0	19.3	25.6	31.6	37.8	44.2	50.8
simulated	6.5	11.8	19.0	25.2	31.2	32.6	44.1	51.0
Adjusted broad income: actual	2.5	5.2	8.8	12.9	17.7	23.6	30.0	37.6
simulated	2.6	5.4	9.1	13.2	18.0	23.9	30.3	37.9
Adjusted broad income as a percentage of broad income								
Actual	305.9	198.3	172.2	142.3	125.0	115.7	112.7	106.6
Simulated	334.3	213.6	183.0	148.9	130.1	120.4	116.6	110.2

Family Money Income Class	$9000–10000	$10000–11000	$11000–12000	$12000–13000	$13000–14000	$14000–15000	$15000 and over	Total
Horizontal cumulative distributions								
Federal taxes: actual	37.2	43.8	50.7	56.4	61.5	65.9	100.0	
simulated	35.6	42.1	49.0	54.7	59.8	64.3	100.0	
Federal expenditures: actual	57.3	62.9	68.1	72.3	76.2	79.5	100.0	
simulated	57.7	63.5	68.8	73.1	77.0	80.3	100.0	
Adjusted broad income: actual	45.0	51.8	58.5	64.0	69.1	73.4	100.0	
simulated	45.3	52.1	58.8	64.2	69.3	73.6	100.0	
Adjusted broad income as a percentage of broad income								
Actual	104.1	102.1	98.9	95.8	96.6	95.3	85.3	104.0
Simulated	107.6	105.4	101.8	98.2	99.1	98.1	87.5	107.6

—an employment expense deduction of 3 percent of employment income, up to $150 a year, is introduced. No deduction previously permitted.
—all taxpayers with married exemption and income solely from wages and salaries will pay less tax. Taxpayers with single exemption and employment income only will pay less tax on incomes under $8,000; above this level the tax increase will not exceed $78 a year.
—all taxpayers age 65 and over will receive a special exemption of $650. The guaranteed income supplement becomes exempt from tax.
—moving expenses become deductible for taxpayers changing jobs.
—limit on deductible donations to charities increased to 20 percent of income from 10 percent. Standard deduction for medical expenses and charitable donations remains at $100.
—the income base is broadened to include:

One-half of capital gains
Payments from income maintenance plans to which employer has contributed
Adult training allowances
Allowances paid under the Textile and Clothing Board Act
Unemployment insurance benefits (contributions deductible)
Scholarships, fellowships and bursaries with $500 exemption
Amounts contributed on an employee's behalf to a public medical care plan

—two types of income averaging replace most of the existing options. General averaging applies automatically when a tax return shows income 10 percent higher than the preceding year and 20 percent higher than the average of four preceding years. Forward averaging permits taxpayers to spread unusual lump-sum receipts over future years through purchase of income-averaging annuities.
—maximum deductible contributions are raised to $2,500 from $1,500 for registered pension plans and deferred profit-sharing plans; and to $4,000 (or 20 percent of earned income) from $2,500 for registered retirement savings plans.
—ten percent foreign investment limit based on cost of assets is established for pension plans, registered retirement savings plans and deferred profit-sharing plans in future. Special tax on excess over 10 percent.

2. *Family and Youth Allowances*

As of January 1, 1974, an allowance of $20 per month is payable in respect of all children under 18 years of age. This allowance is taxable in the hands of the parent claiming the tax exemption in respect of the child. Prior to 1974 the following rates of *non taxable* allowance were paid:

children under 10 years—$6 per month,
children 10 to 15 years—$8 per month and
children 16 and 17 attending school—$10 per month

3. *Old Age Security and Guaranteed Income Supplement*

In 1972, taxable OAS payment $82.88 per month per person 65 years of age and over replaced the 1970 payment of $79.88 (taxable) per month. The guaranteed income supplement, which is reduced by $1 for every $2 of income from private sources, was increased from $31.83 per month per person in 1970 to $67.12 for a single person in 1972 ($119.24 per married couple).

4. *Unemployment Insurance*

The unemployment insurance system was totally restructured by the 1971 Act. While the new system is very complex, its main features are as follows:

Benefits (taxable) are paid at $\frac{2}{3}$ of average weekly insurable earnings up to maximum earnings (1972) of $150 per week.

Persons with 8 to 17 weeks of labour force attachment in the last year may claim 18 weeks of regular benefits plus up to 26 weeks of "extended" benefit if national and regional unemployment rates exceed certain levels.

Persons with 20 weeks or more of contributions in the past year may claim 25 weeks of benefit when unemployed plus 1 week for every 2 weeks of attachment over 20, plus "extended" benefit if national and regional unemployment rates exceed certain levels to a total maximum of 51 weeks. In addition, up to 15 weeks of special benefit may be claimed for sickness or maternity.

Employee contributions in 1972 were set at 90¢ per week per $100 of weekly earnings and are tax-deductible. Employer contributions are equal to 1.4 times employee contributions. Approximately 96 percent of all paid workers are covered under the new system.

Under the old (1970) U.I. system benefits were paid at a variable rate depending on income and dependents up to earnings of $105 per week at which point the maximum benefit was reached. Below $105 the *non taxable* benefit ranged from about 35 percent to 55 percent of weekly earnings.

Regular benefits were payable on the basis of one week of benefits for each two weeks of contributions in the past two years. A minimum of 30 weeks of insurable employment in the past two years was required to qualify. In addition, seasonal benefits were payable to those who exhausted their regular benefits between December and mid May.

Employee contribution rates varied with weekly earnings from 20¢ on weekly earnings of $20 to a maximum of $1.40 at weekly earnings of $105. Employer contributions were fixed at $1.40 per worker per week regardless of his rate of pay. Approximately 80 percent of paid workers were covered under the old system.